



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO24589**

Purchase Order Date 6/13/2014

PO Print Date 6/13/2014

Page Number 1 of 6

**Order From :**

VU-BEA001

B/E AEROSPACE INC  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

**Ship To :** DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**FAKED**

**Contact Name**

**Vendor Phone** 305-925-2600

**Ship To Contact**

**Ship To Phone**

**Ship Via:** FedEx PI collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	MS20392-1R27	Pin	6/18/2014 Yes 6/18/2014		50.00 Each	\$15.80	\$790.00
Line Total:							\$790.00
2	AN3C10A	Bolt	6/18/2014 Yes 6/18/2014	FN	50.00 Each	\$0.52	\$26.00
Line Total:							\$26.00
3	AN3C16A	BOLT	6/18/2014 Yes 6/18/2014		50.00 Each	\$0.60	\$30.00

**Note:**

6/13/2014



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1270 Aberdeen Street  
Hawkesbury, ON-K6A 1K7  
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## PURCHASE ORDER

Purchase Order ID. PO24589

Purchase Order Date 6/13/2014

PO Print Date 6/13/2014

Page Number 2 of 6

**Order From :**

VU-BEA001

**Ship To :** DART AEROSPACE LTD

B/E AEROSPACE INC  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone**

305-925-2600

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

FedEx PI collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

Line Total: \$30.00

4 AN3C41A

Bolt

6/18/2014 FN

45.00

\$16.97

\$763.65

Yes

6/18/2014

Each

Line Total: \$763.65

5 AN3C4A

Bolt

6/18/2014 FN

2,500.00

\$0.22

\$550.00

Yes

6/18/2014

Each

Line Total: \$550.00

6 AN3H4A

Bolt

6/18/2014

40.00

\$0.50

\$20.00

Yes

6/18/2014

Each

Line Total: \$20.00

Note:

6/13/2014



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## PURCHASE ORDER

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USA

VU-BEA001

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CANADA

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FedEx PI collect

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**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

7	AN44C7A	Eyebolt	6/18/2014	15.00	✓	\$15.27	\$229.05
339			Yes	Each			
			6/18/2014				
<b>Line Total:</b>							<b>\$229.05</b>
8	AN4C10A	BOLT	6/18/2014	20.00	✓	\$0.75	\$15.00
347			Yes	Each			
			6/18/2014				
<b>Line Total:</b>							<b>\$15.00</b>
9	AN5-13A	BOLT	6/18/2014	50.00	✓	\$0.30	\$15.00
338			Yes	Each			
			6/18/2014				
<b>Line Total:</b>							<b>\$15.00</b>
10	AN525-10R22	Screw	6/18/2014	100.00	✓	\$0.17	\$17.00
329			Yes	Each			
			6/18/2014				
<b>Line Total:</b>							<b>\$17.00</b>

Note:

6/13/2014



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## PURCHASE ORDER

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Purchase Order Date 6/13/2014

PO Print Date 6/13/2014

Page Number 4 of 6

**Order From :**

VU-BEA001

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B/E AEROSPACE INC  
88289 EXPEDITE WAY  
CHICAGO, IL 33172  
USA

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CANADA

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**Vendor Phone**

305-925-2600

**Ship To Contact**

**Ship To Phone**

**Ship Via:**

FedEx PI collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

USD

**FOB**

FCA - (Free Carrier)

**Line Total:** \$17.00

11 AN6-40A

Bolt

6/18/2014 FN

50.00

Yes

Each

6/18/2014

\$1.97

\$98.50

**Line Total:** \$98.50

12 AN833-6D

Elbow, Bulkhead-M-Flare

6/18/2014

12.00

Yes

Each

6/18/2014

\$9.25

\$111.00

**Line Total:** \$111.00

13 AN924-6D

Nut

6/18/2014 FN

25.00

Yes

Each

6/18/2014

\$0.95

\$23.75

**Line Total:** \$23.75

**Note:**

6/13/2014



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USA

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**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #** 10127-2607

**Terms** Net 30

**Currency** USD

**FOB** FCA - (Free Carrier)

14	AN970-4	Washer	6/18/2014	FN	400.00	✓	\$0.07	\$28.00
			Yes		Each			
			6/18/2014					

309

**Line Total:** \$28.00

15	MS21043-3	Nut	6/18/2014	FN	500.00	✓	\$0.38	\$190.00
			Yes		Each			
			6/18/2014					

306

**Line Total:** \$190.00

16	NAS1515H3	Washer	6/18/2014	FN	400.00	✓	\$0.05	\$20.00
			Yes		Each			
			6/18/2014					

214

124/6/14

**Line Total:** \$20.00

**Note:**

6/13/2014

# Alcoa Fastening Systems



Packing Slip



Packing Slip: 9948080015

Page: 1

Bill To: 5574  
B/E AEROSPACE, INC.  
P.O.BOX 025263  
MIAMI FL 33102-5263  
USA

Ship To: (14)  
B/E AEROSPACE CONSUM MGMT  
9835 NW 14TH ST  
MIAMI FL 33172  
USA

From:  
ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight Pkgs #
12/30/13	F433565	0FRW45		

Line/Rel	Item	/M	Qty Ordered	Qty To Pack
8-1	AAT840 H41-3		25,000	9,520

# PACKING SLIP

C/I: MS21043-3

PO Item #: 4

\*\*\* TSO C-148 APPVD PART. TSO LABEL REQUIRED \*\*\*

Use Date: 01/10/14

Exp Date: 01/02/14

Lot: M024653-000

COO:MEXICO

Waybill:

ECCN:9A991 Schedule-B Number:7318.16.0000

HTS-Code:7318.16.0060

The export classification appears above. You are responsible for all related export license requirements.

MFG C OF C CHEM & PHYS TEST REPORT REQ

\*\* DUAL CERT TO NAS1291C3 AND LS8859-3

\*\*

SHIP VIA : FED EX AIR

K4  
12/30/13

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653

Eagle Products: Cage Code 66776

Rosen Products: Cage code 66776

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON. FOR ITEMS CERTIFIED TO BPS-N-70, ALLOY VERIFICATION HAS BEEN PERFORMED ON PARTS WITH A DATE OF MANUFACTURE ON OR AFTER JANUARY 1, 2001. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

CUSTOMER'S COPY

# Alcoa Fastening Systems



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Packing Slip: 9948080015  
Page: 2

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MIAMI FL 33172  
USA

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ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
12/30/13	F433565	0FRW45			

Line/Rel	Item	/M	Qty Ordered	Qty To Pack
----------	------	----	-------------	-------------

BUYER: CRISTINA SANCHEZ PHONE:  
MATERIAL COMPLIES WITH DFARS 252.225-700  
9 PREFERENCE FOR DOMESTIC SPECIALTY  
METALS" WITH ITS ALTERNATE 1.  
\*\*\*SHIP VIA FEDX AIR COLLECT AETH 033  
0149-0 IF 150 LBS OR MORE:SHIP FED  
EX FREIGHT ECONOMY COLLECT ACOE 01875  
\*\*\*

DO NOT SHIP BY ANY OTHER WITHOUT PROPER  
WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.  
\*\* BAR CODE PER QAP 33 CLAUSE P REQUIRED  
\*\*\*

\*\* QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H  
,P,U,V. CLAUSE A.3 GENERAL TERMS  
APPLIES.

\*\*\* PER JESSICA 8/24 PULL IN MARCH & JUN  
E SCH FROM 2013 TO ASAP VB 8/24  
chem & phys certs

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653 • Eagle Products: Cage Code 66776 • Rosan Products: Cage code 66776  
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From:  
ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Notice to Subsequent Purchaser or Repacker.  
These articles are imported. The requirements of 19 U.S.C.  
1304 & CFR part 134 provide that the articles or their  
containers must be marked in a conspicuous place as  
legibly, indelibly & permanently as the nature of the article or  
container will permit, in such a manner as to indicate to an  
ultimate purchaser in the United States, the English name of  
the country of origin of the article.

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
12/30/13	F433565	0FRW45			

Line/Rel

Item

Ordered

To

8-1

APPV840  
H41-3

695,000

94,520

C/I: MS21043-3

PO Item #: 4

\*\*\* TSO C-148 APPVD PART. TSO LABEL REQ'D \*\*\*

Cust Date: 01/10/14

Kay Date: 01/02/14

Lot: M024653-000

COO:MEXICO

Waybill:

ECCN:9A991 Schedule-B Number:7318.16.0000

HTS-Code:7318.16.0060

The export classification appears above. You are  
responsible for all related export license  
requirements.

MFG C OF C CHEM & PHYS TEST REPORT REQ

\*\* DUAL CERT TO NAS1291C3 AND LS8859-3

\*\*

SHIP VIA : FED EX AIR

## CERTIFICATE OF CONFORMANCE

This is to certify that all items noted above were produced in conformance with  
the contract, drawing specifications, and other applicable documents. All  
required process certifications, chemicals and physical test reports are on file  
subject to examination. This document must not be reproduced except in  
full and relates only to the items tested.

MICHELE M. VARELA  
Quality Manager  
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653 • Eagle Products: Cage Code 66776 • Rosan Products: Cage code 66776

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USA

From:  
ALCOA FASTENING SYSTEMS  
AEROSPACE PRODUCTS  
FULLERTON OPERATIONS  
800 SOUTH STATE COLLEGE  
FULLERTON CA 92831  
USA

Order Contact:

=====

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
12/30/13	F433565	0FRW45			

=====

Line/Rel Item Description Qty Ordered Qty to Pack

BUYER: CRISTINA SANCHEZ PHONE  
MATERIAL COMPLIES WITH DFARS 252.225-700  
9 PREFERENCE FOR DOMESTIC SPECIALTY  
METALS" WITH ITS ALTERNATE 1.  
\*\*\*SHIP VIA FEDX AIR COLLECT ACCT# 0331-  
0149-0 IF 150 LBS OR MORE:SHIP FED  
EX FREIGHT ECONOMY COLLECT ACCT# 018757.  
\*\*\*  
DO NOT SHIP BY ANY OTHER WITHOUT PROPER  
WRITTEN AUTHORIZATION.  
ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.  
\*\* BAR CODE PER QAP 33 CLAUSE P REQUIRED  
\*\*\*  
\*\* QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H  
,P,U,V. CLAUSE A.3 GENERAL TERMS  
APPLIES.  
\*\*\* PER JESSICA 8/24 PULL IN MARCH & JUN  
E SCH FROM 2013 TO ASAP VB 8/24  
chem & phys certs

## CERTIFICATE OF CONFORMANCE

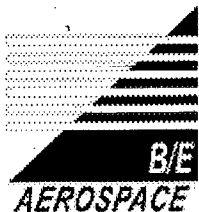
This is to certify that all items noted above were produced in conformance with the contract, drawing specifications, and other applicable documents. All required process certifications, chemicals and physical test reports are on file subject to examination. This document must not be reproduced except in full and relates only to the items tested.

MICHELE M. VARELA  
Quality Manager  
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

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CUSTOMER'S COPY



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
15	500	EA	MS21043-3		M024653-000	ALCOA KAYNAR FULLERT	15653		

  
Jason Lewis  
Vice President of Quality

06/16/14

NO.

Page 1 of 3

8194803

Lot No.

M024653-000

**Alcoa  
Fastening  
Systems**Aerospace Products  
Fullerton Operations  
800 S.STATE COLLEGE BLVD  
FULLERTON, CA 92831**TEST REPORT**

Supplier Item No.

AAT840

Supplier Part No.

H41-3

Interchange Part No.

525-595-9005 Rev. N

Interchange Part No.

GTS297-4 Rev. 3

Interchange Part No.

H41-3

Interchange Part No.

LS8859-3 Rev. A

Interchange Part No.

MS21043-3 Rev. 3

Interchange Part No.

N8862175/E Rev. 5a

Interchange Part No.

NAS1291A3 Rev. 13

Interchange Part No.

NAS1291C3 Rev. 13

Interchange Part No.

Manufactured Quantity

94520

Mfg. Date

11/22/13

Generic Description

NUT 6 POINT

Thread Size

.1900-32

PLATE/COAT

AMS 2410 REV. K

HEAT TREAT

AMS-H-6875 REV. B

Non-Destruct

ASTM E1417 REV. 11 E1 SAMPLE

PERFORMANCE

NASM25027 REV. 1

Material Spec. # 1

AMS 5731-L

Mill Heat No.

568773

Control Heat No.

AA19361

Material Supplier

CARPENTER TECHNOLOGY CORP

Special Process Requirements:

THREADS AND GAUGING PER AS8879 Rev.DR12

and ASME B1.3M SYS. 22

MIN EQUALS BKWY MAX EQUALS INST.

\* CONFORMS TO AMS5732J AFTER HT TREAT

MAGNETIC PERMEABILITY LESS THAN 2.0

**TEST RESULTS**

TEST No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
1 - 010 TORQUE TEST 18 lbs max install./2.0 lbs min bkwy.	IN#	1	1	11.60	13.40		2.00	18.00
			7	10.60	13.85			
			15	11.05	12.75			
		2	1	9.70	10.20			
			7	10.10	10.05			
			15	10.15	9.80			
		3	1	8.20	8.85			
			7	5.70	5.65			
			15	4.90	5.10			
		4	1	8.85	9.05			
			7	6.55	6.95			
			15	7.40	7.70			
		5	1	9.00	9.05			
			7	7.55	8.15			
			15	7.60	7.40			
		6	1	6.60	7.00			
			7	6.70	6.35			
			15	7.95	8.15			

TEST RESULTS - Continued on next page.

**THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL AND RELATES ONLY TO THE ITEMS TESTED**

The product identified on this Certificate has been manufactured, tested and unless otherwise noted, conforms in all respects to the applicable drawings, specifications and standards. Complete reports of physical and chemical tests are on file for examination. If no specified customer quality level is required, goods conform to sellers quality level. All Damages Exceeding Price are Excluded. For items certified to BPS-N-70 alloy verification has been performed on parts with a date of manufacturing on or after January 1, 2001. Quality system sampling plan conforms to the requirement of QAP EQ001, QAP EQ002, QAP EQ003. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

MICHELE M. VARELA, QA MGR.

ALCOA GLOBAL FASTENERS, INC.

Rev. 12/02 Form 11198

SHIPPER#: 9948080015

This document shall not be reproduced, except in full, without the written approval of AFS.

NO.

Page 2 of 3

**Alcoa  
Fastening  
Systems**Aerospace Products  
Fullerton Operations  
800 S.STATE COLLEGE BLVD  
FULLERTON, CA 92831**TEST REPORT**

8194803

Lot No.

**M024653-000**Supplier Item No.  
**AAT840**Supplier Part No.  
**H41-3****TEST RESULTS - Continued from previous page.**

TEST No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
2 - 020 TENSILE TEST BOLT & THD FRACTURED	LBS	7	1	10.05	10.40		2460.00	
			7	9.10	9.00			
			15	8.75	8.30			
		8	1	9.60	10.35			
			7	6.45	7.05			
			15	6.60	7.30			
		9	1	10.40	10.15			
			7	8.80	9.35			
			15	9.30	9.40			
		10	1	10.45	10.70			
			7	12.80	12.70			
			15	11.50	11.35			
		11	1	9.25	10.05			
			7	6.55	6.60			
			15	6.45	6.60			
		12	1	8.70	8.50			
			7	8.70	8.25			
			15	9.20	9.80			
		13	1	11.85	12.30			
			7	10.25	10.25			
			15	11.50	11.30			
		14	1	8.75	9.45			
			7	8.25	8.65			
			15	10.70	10.70			
		15	1	9.25	10.40			
			7	8.05	7.85			
			15	10.70	8.55			
		1	1	2590.00				
		2	1	2590.00				
		3	1	2590.00				
		4	1	2590.00				
		5	1	2590.00				
		6	1	2590.00				
		7	1	2590.00				
		8	1	2590.00				
		9	1	2590.00				
		10	1	2590.00				
		11	1	2590.00				
		12	1	2590.00				
		13	1	2590.00				

**TEST RESULTS - Continued on next page.****THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL AND RELATES ONLY TO THE ITEMS TESTED**

The product identified on this Certificate has been manufactured, tested and unless otherwise noted, conforms in all respects to the applicable drawings, specifications and standards. Complete reports of physical and chemical tests are on file for examination. If no specified customer quality level is required, goods conform to sellers quality level. All Damages Exceeding Price are Excluded. For items certified to BPS-N-70 alloy verification has been performed on parts with a date of manufacturing on or after January 1, 2001. Quality system sampling plan conforms to the requirement of QAP EQ001, QAP EQ002, QAP EQ003. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

MICHELE M. VARELA, QA MGR.

ALCOA GLOBAL FASTENERS, INC.

Rev. 12/02 Form 11199

SHIPPER#: 9948080015

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NO.

Page 3 of 3

**Alcoa  
Fastening  
Systems**Aerospace Products  
Fullerton Operations  
800 S. STATE COLLEGE BLVD  
FULLERTON, CA 92831**TEST REPORT**

8194803

Lot No.

**M024653-000**Supplier Item No.  
**AAT840**Supplier Part No.  
**H41-3****TEST RESULTS - Continued from previous page.**

----- TEST ----- No. Description	JOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
3 - 110 HARDNESS HRC 38/44 7 - 113 Hardness (HR15N)	RC	14	1	2590.00				
		15	1	4170.00				
		1	1	39.00	40.00			
		1	1	(80.10)	(80.50)			

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**MICHELE M. VARELA, QA MGR.**

ALCOA GLOBAL FASTENERS, INC.

Rev. 12/02 Form 11199

**SHIPPER#: 9948080015**

## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT SERIAL# 000881110

**CARPENTER**

Carpenter Technology Corporation  
101 West Barn Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

09/30/13

CUSTOMER/BESTELLER/CLIENT

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
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SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 3

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON, CA 92631

CARPENTER TECHNOLOGY CORP  
RANCHO CUCAMONGA D.C.

8250 MILLIKEN AVE.  
RANCHO CUCAMONGA, CA 91730

CUSTOMER ORDER NO./BESTELL.-NR./N° DE COMMANDE	CARPENTER NO./WERKS.-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
220677353 /	LOS449401 L20393	09/30/13	3882.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:

568773 / AA19361

PRODUCT DESCRIPTION: A286 SOLUTION ANNEALED COLD FINISH SEAM FREE C HDG CL H2  
----- STD CU/LM SOAP  
PART NUMBER: 732084 /

SPECIFICATION: FAIRCHILD MS 309 CLASS A REV 16 (09/15/10)  
----- AMS 5732 REAFFIRMED REV J (07/ /12) (CAPABLE OF)  
FAIRCHILD MS 550 REV 2 (12/10/02)  
AMS 5731 REAFFIRMED HEADING STOCK REV L (07/ /12)

SIZE / 0.279000 IN. ( 7.09 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (OES)	S (COM)	CR (XRF)
0.04 /	0.38 /	0.16 /	0.016 /	LT .0005 /	13.84 /
NI (XRF)	MO (XRF)	CU (XRF)	CO (XRF)	AL (OES)	TI (OES)
24.28 /	1.21 /	0.16 /	0.25 /	0.14 /	2.14 /
V (XRF)	B (OES)				
0.26 /	0.0062 /				

THE CHEMICAL ANALYSIS OF THIS HEAT HAS BEEN PERFORMED BY THE CARPENTER SPECIALTY ALLOYS CHEMICAL LABORATORY, (CODE NUMBER PRI 100004), WHICH WAS ACCREDITED TO THE ISO/IEC 17025.

COUNTRY OF ORIGIN: U.S.A.

THIS MATERIAL HAS BEEN SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH THE SPECIFICATION AND MEETS ALL SPECIFICATION REQUIREMENTS.

THIS MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL REVISION 30, DATED 09/28/11.

THIS MATERIAL WAS MANUFACTURED FREE FROM MERCURY, RADIUM AND ALPHA SOURCE CONTAMINATION.

MILL HEAT TREATMENT:

TYPE	SOLUTION ANNEAL
TEMP	1800F ( 982C)
TIME	CONTINUOUS FURNACE
AT TEMP	WATER
QUENCH	

10/03/13

CONTINUED ON NEXT PAGE

This certification is made to the customer printed on this form. Carpenter neither endorses, nor assumes responsibility for, any representation or certification to other parties.  
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## CERTIFICATE OF TESTS

## ABNAHMEPRUEFZEUGNIS

## CERTIFICAT DE CONTROLE

CERT SERIAL# 000881110

**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

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09/30/13

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 3

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON , CA 92631

CARPENTER TECHNOLOGY CORP  
RANCHO CUCAMONGA D.C.

8250 MILLIKEN AVE.  
RANCHO CUCAMONGA, CA 91730

CUSTOMER ORDER NO./BESTELL.-NR./N° DE COMMANDE	CARPENTER NO./WERKS.-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
220677353	LOS449401 L20393	09/30/13	3882.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 568773 ✓  
HARDNESS AS SHIPPED, HRBW - 84 ✓ (MIDRADIUS)  
TENSILE AS SHIPPED, KSI (MPA) 92.0 ( 634)  
GRAIN SIZE PER ASTM E112: 6 ✓ (KALLINGS)

## CAPABILITY

1800 F ( 982 C ) , 01 HR OIL TREAT  
1325 F ( 718 C ) , 16 HR AIR COOL

COMBINATION STRESS RUPTURE  
TEST TEMP 1200 F ( 649 C )  
STRESS, KSI (MPA) 70.0 ( 483 )  
ELONGATION % 37.8  
HOURS 78.3

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST  
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:  
TOTAL HOURS STRESS KSI (MPA)

53 75.0 ( 517 )  
64 80.0 ( 552 )  
77 85.0 ( 586 )

(T) RANSVERSE (L) ONGITUDINAL L  
YIELD STRENGTH, (0.20 %) KSI (MPA) 108.0 ( 745 )  
TENSILE STRENGTH, KSI (MPA) 158.0 ( 1089 )  
ELONGATION IN 2.00" , % 23.0  
REDUCTION OF AREA, % 44.0  
HARDNESS , HBW - 318.0

CONTINUED ON NEXT PAGE

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101 West Barn Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

09/30/13

CUSTOMER/BESTELLER/CLIENT

ALCOA FASTENING SYSTEMS  
FULLERTON OPERATION  
P O BOX 3001  
FULLERTON , CA 92631

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SELLER/VERKÄUFER/VENDEURPAGE 3 OF 3

CARPENTER TECHNOLOGY CORP  
RANCHO CUCAMONGA D.C.

8250 MILLIKEN AVE.  
RANCHO CUCAMONGA, CA 91730

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
220677353	LOS449401 L20393	09/30/13	3882.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

568773

## CAPABILITY

1650 F ( 899 C ) , 02 HR  
1325 F ( 718 C ) , 16 HR

OIL TREAT  
AIR COOL

COMBINATION STRESS RUPTURE  
TEST TEMP 1200 F ( 649 C )  
STRESS, KSI(MPA) 65.0 ( 448 )  
ELONGATION % 40.4  
HOURS 57.6

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST  
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS STRESS KSI(MPA)  
48 70.0 ( 483 )  
56 75.0 ( 517 )

(T) RANSVERSE (L) ONGITUDINAL L  
YIELD STRENGTH, (0.20 %) KSI(MPA) 111.0 ( 765 )  
TENSILE STRENGTH, KSI(MPA) 159.0 ( 1096 )  
ELONGATION IN 2.00", % 23.0  
REDUCTION OF AREA, % 45.0  
HARDNESS , HBW 326.0

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

JASON M RAYMOND  
ADMINISTRATOR - QUALITY  
CARPENTER TECHNOLOGY CORPORATION

GPV\*732084

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# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	50	EA	AN3C10A		67119	MAC FASTENERS	0RPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

***Packing List*****Bill** B/E AEROSPACE CONSUMABLES MGMT**To:** 10000 NW 15TH TERRACE

Miami, FL 33172

United States

**Ship** BE AEROSPACE**To:** 10000 NW 15TH TERRACE

Miami, FL 33172

United States

**Shipment No:** 61148**Shipment Date:** 11/08/13**Ship Via:** United Parcel Service**Order Number:** 47632**Order Date:** 03/23/13**Customer Code:** BE NON-LTA**Phone:** (305) 925-2600**PO Number:** 0NJZ03**Terms:** Net 30 Days

LOT #67119

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
1	50,000	50,000	0		EA	AN3C10A Bolt, machine-- Aircraft	67119

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0NJZ03

PART NUMBER: AN3C10A

REV: 2

LOT NUMBER: 67119

MANUFACTURED QUANTITY: 50,000

MILL HEAT NUMBER: 568597

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured  
by MAC FASTENERS, INC. within the United States, and were processed in accordance with all  
applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 11/07/13

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER ONJZ03	MFG QUANTITY 50,000	DATE 11/07/13
PART NUMBER AN3C10A	REV 2	LOT NO 67119	PROCUREMENT SPEC NASM6812

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 431				ASTM A493				568597			CARPENTER		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.17	.48	.65	.019	.001		1.58	15.9						
	Co	N	BI	Pb	Mg	Zn		Nb	Sn			Other	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
3,390	
3,350	
3,360	
3,370	
3,350	
MIN. REQ.	2,210

DOUBLE SHEAR STRENGTH POUNDS / PSI	
4,770	
4,750	
4,740	
4,730	
4,760	
MIN. REQ.	4,250

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	
27 - 31 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22	System <input type="checkbox"/> 23

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 11/07/13

PO NUMBER: 0NJZ03

MANUFACTURED QUANTITY: 50,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 67119

MATERIAL: TYPE 431

PART NUMBER: AN3C10A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27 - 31 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners Lot#: 67119  
PART NUMBER: AN3C10A  
PROCUREMENT SPECIFICATION: n/a  
OTHER CONTRACTURAL REQUIREMENTS:  
MATERIAL: 431  
QUANTITY: 645 lbs  
INVOICE NUMBER: 174236

## Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME: 

JOB TITLE: VICE-PRESIDENT

DATE: 11/05/2013

**CERTIFICATE OF TESTS**
**ABNAHMEPRUEFZEUGNIS**
**CERTIFICAT DE CONTROLE**
**CERT SERIAL# 000879077**

**CARPENTER**

 Carpenter Technology Corporation  
 101 West Bern Street, Reading, Pa. 19601  
 Tel: (610) 208-2000 (800) 338-4592

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- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

06/10/13

**CUSTOMER/BESTELLER/CLIENT**
**SELER/VERKAUFER/VENDEUR PAGE 1 OF 1**
**MAC FASTENERS INC**

 1110 E. ENTERPRISE  
 OTTAWA KS 66067

**BOL**

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
81050	W72447	06/10/13	2395.000

**HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 568597**
**PRODUCT DESCRIPTION: TYPE 431 COLD FINISH SEAM FREE ANNEALED C HDG CL K1 HVY**  
 ----- **CU TENSILE MAX 100.0 KSI**
**SPECIFICATION: ASTM-A493-09**  
 -----

**SIZE 0.187500 IN. ( 4.76 MM) RD WIRE**
**PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)**

<b>C (COM)</b>	<b>MN (XRF)</b>	<b>SI (XRF)</b>	<b>P (XRF)</b>	<b>S (COM)</b>	<b>CR (XRF)</b>
0.17	0.65	0.48	0.019	0.001	15.9
<b>NI (XRF)</b>					
1.58					

**TENSILE AS SHIPPED, KSI (MPA) 94.5 ( 652)**  
 -----

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

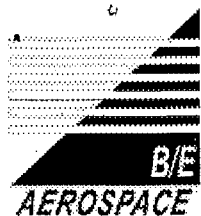
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

**GARY BROWN**  
 MANAGER - SPECIFICATIONS/CERTIFICATIONS  
 CARPENTER TECHNOLOGY CORPORATION

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
 Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgetragenen Daten oder Zertifizierungen.  
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
7	15	EA	AN44C7A		44682C	OTT BROTHERS	09292		

  
Jason Lewis  
Vice President of Quality

06/16/14



2455 S. LEONINE RD  
WICHITA, KS 67217

# INVOICE

Phone (316) 522-8145 Fax (316) 522-8817

## Bill Tox

**B/E AEROSPACE INC.**  
P.O. BOX 025263  
MIAMI, FL 33102

**Ship to:**

B/E AEROSPACE INC.  
9835 NW 14TH ST.  
MIAMI, FL 33172

Invoice Date	Ship Date	VIA	Customer PO	Payment Terms	Invoice Number
Feb 3, 2014	Feb 3, 2014	UPS	0PRF94	1% 10, Net 30 Days	44052

Quantity	Item	Description/Lot Number	Price Ea	Amount
50.00	AN44-C7A	EYEBOLT, REV. 1 / LOT# 44682C		
1.00	C&P	Chemical & Physical Reports		

**Total Invoice Amount**

NOW ACCEPTING ALL MAJOR CREDIT CARDS

WE CERTIFY THAT THE RAW MATERIAL USED ON THE ABOVE PURCHASE ORDER MEETS THE REQUIREMENTS OF THE DRAWING. TEST REPORTS PERTAINING TO RAW MATERIAL, HEAT TREATING AND PLATING ARE ON FILE. PAUL OTT, QUALITY CONTROL F--

Paul E. Ott

**OBM, INC.**  
**2455 S. LEONINE RD.**  
**WICHITA, KS 67217-1069**  
**PHONE (316) 522-8145**  
**FAX (316) 522-8817**

ENCLOSED PLEASE FIND CERTIFICATIONS FOR THE FOLLOWING:

DATE: 02/03/2014

CUSTOMER NAME: B/E AEROSAPCE

CUSTOMER PURCHASE ORDER NUMBER: 0PRF94

PART NUMBER: AN44-C7A 50 PCS.

LOT NUMBER: 44682C REV. 1

THE FOLLOWING MATERIAL/PROCESSES IN ACCORDANCE WITH  
NASM6812 WERE USED:

STEEL SUPPLIER: FRY STEEL CO.

MATERIAL HEAT NUMBER: G18870

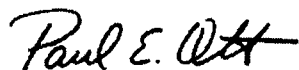
HEAT TREATING BY: BODYCOTE

PURCHASE ORDER NUMBER: 1572

PLATING/PASSIVATION BY: DETRAY PLATING WORKS

PURCHASE ORDER NUMBER: 1710

WE CERTIFY THAT THE ABOVE MATERIAL/PROCESSORS WERE USED  
IN THE MANUFACTURE OF THE REFERENCED LOT OF PARTS.



PAUL E. OTT Q.A. REPRESENTATIVE


Order Number: **3424522**Time: **09:27:58****FRY STEEL COMPANY**Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721Order Number: **3424522**Cust No.: **000961****PACKING LIST**

SHIP TO:

SOLD TO:

**OTT BROTHERS  
2455 S LEONINE ROAD  
WICHITA KS 97217****(316) 522-8145**

SHIP TO SAME AS SOLD TO UNLESS OTHERWISE NOTED

ORDER DATE <b>06/13/12</b>	CUSTOMER P.O. NUMBER <b>120613-001-FAX</b>	TAX <b>N</b>	ENTERED BY <b>MIKE Jami</b>	FRY REF. NO.	W.G. <b>1</b>	ATTN.		
ROUTING <b>FED FRT ECONOMY B.O. ON ARRIVAL</b>		SCHEDULE <b>B.O. ON ARRIVAL</b>		COL	PRE	MAIL <b>1</b>	DEPT	
QUANTITY	DESCRIPTION	WEIGHT	UNIT PRICE	U/M	EXT. AMOUNT	HEAT NUMBER	OUT FROM	RET.
	SPECIAL INSTRUCTIONS							
	<b>CD 431 ANN AMS 5828 GREEN/YELLOW</b>							
	<b>BARS 5/8"RD 12'RL PIE 2000LBS</b>	<b>S#4320</b>		<b>X</b>		<b>[ ]</b>		
	<b>PAUL (316)522-8145</b>					<b>G18870</b>		

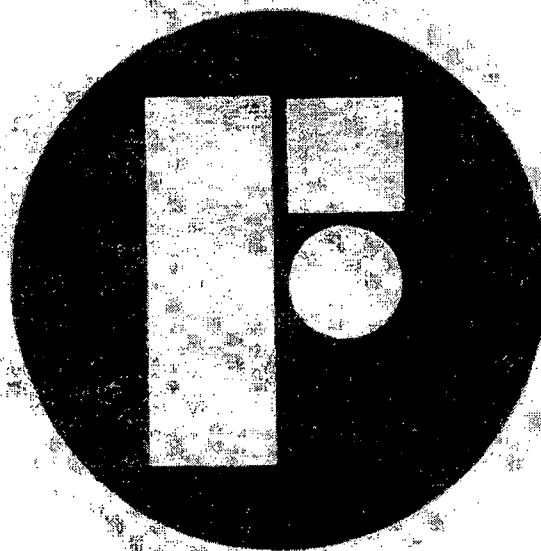
THIS MATERIAL IS FREE FROM MERCURY AND RADIUM CONTAMINATION AT TIME OF SHIPMENT.  
THIS MATERIAL WILL MEET ALL SPECIFICATION REQUIREMENTS LISTED.THE WILLFUL RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS ON THIS DOCUMENT  
MAY RESULT IN PUNISHMENT AS A FELONY UNDER FEDERAL STATUTES.**CUSTOMER COPY****CHEMICAL AND PHYSICAL ANALYSIS FOR ABOVE ITEM(S) ATTACHED** See Reverse for Material Safety Data Information

3424522

## FRY STEEL COMPANY

3424522

13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562)-802-2721  
REGISTERED ISO 9001



Order Number: 3424522  
Order Date: 06/20/12  
Customer Name: OTT BROTHERS  
Customer P.O.: 120613-001-FAX

**ATTENTION PURCHASING !!**

**WE ARE ACCEPTING QUOTES BY e-MAIL**

***fryquotes@frysteel.com***

**1 800 423-6651 {for U.S. & Canada}**

**Visit us on the Web at *frysteel.com***

***Thank you for choosing Fry Steel***

2455 S Leonine Road  
Wichita, KS 67217

DATE	P.O. NO.
1/29/2014	1710

Vendor
DETRAY PLATING WORKS 10405 EAST 11TH STREET INDEPENDENCE, MO 64052

SHIP TO
Ott Brothers Manufacturing Co., Inc. 2455 S Leonine Road Wichita, KS 67217

POUNDS	TERMS	Expected	SHIP VIA
3	Net 30	2/4/2014	UPS
QTY	ITEM	MFG LOT #	
55	AN44-C7A	44682C	

PASSIVATE PER  
SAE AMS 2700 REV. E  
INSPECT AS REQUIRED  
WE NEED CERTS

MATERIAL IS 431 STAINLESS  
HEAT TREAT IS RC27-32

--

Order No: 3424522  
Time 06:57:33



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

000961  
Cust. NO.: 120613-001-FAX  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

OTT BROTHERS  
2455 S LEONINE ROAD  
WICHITA KS 97217

06/13/12

QTY	--DESCRIPTION--	--ITEM CODE--	--HEAT NUMBER--
	CD 431 ANN AMS 5628 GREEN/YELLOW		
	BARS 5/8"RD 12'RL PIE 2000LBS	4320	G18870
	PAUL (316) 522-8145		

### NOTICE

**A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\***

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

**AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION(I.E. MAG., SONIC,ETC.)**

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION. PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

**NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT**

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

  
CHIP SANDOVAL - Q.C. MANAGER



# Dunkirk Specialty Steel, LLC

A Universal Stainless Company

P.O. Box 319

830 Brigham Rd.

Dunkirk, NY 14048

Quality System Registered to  
ISO9001 and AS9100

## Material Certification

MILL ORDER: 0043677  
PART NUMBER: 584320  
P.O. NUMBER: 46901-16

P.O. DATE: 1/27/2012

PAGE NUMBER: 1 of 1

PRINTED: 6/12/12 07:30

S FRY STEEL COMPANY  
O T P.O. BOX 4048  
L O  
D

SANTA FE SPRINGS, CA 90670

S FRY STEEL CO  
H T C/O C.M.T. FREIGHT TRANS  
I O 4201 WEST 36TH ST  
P

CHICAGO, IL 60623

Material Description: STAINLESS STEEL ROUND BAR 431 EAF+AOD ANNEALED CENTERLESS GROUND AMS 2303F, ASTM A484-10, MIL-S-18732D, AMS-S-18732B, AMS 5628F, McDonnell Douglas DNS-1565G (except sonic), Hi Shear #115J (Type II, chemistry only), Federal QQ-S-763C Am. 2 (431 cond. A, exc. hard. & impact), waive CLM, ASTM A276-10 (431).

Size: .6250 DIAM X 132.0000 MIN/

156.0000 MAX RANDOM LENGTH

Heat Number	C	0.15	SI	0.30	S	0.002	P	0.017
G18870	CR	16.35	W	<0.05	V	0.02	NI	2.24
	CO	<0.05	CU	0.13	SN	0.008	PB	<0.01
	TA		AL	<0.01	TI	<0.01	FE	
	O		MC		CA		SE	
	AG		BI		N	0.060	H	

HARDNESS (AS SHIPPED): 277 BHN

TENSILE CAPABILITY: 1875F/1HR/OQ+1175F/3HR/AC

T/S KSI	Y/S KSI	VEL
152.4	105.0	17.5

TENSILE CAPABILITY: 1875F/1HR/OQ + -100F/2HR/AC+550F/2HR/AC + 550F/2HR/AC

T/S KSI	Y/S KSI	VEL	VR/A
218.9	159.6	16.0	57.0

HARDENABILITY: Rc 50.0

MICRO TEST: ACCEPTABLE

MAGNETIC PARTICLE TEST: ACCEPTABLE

GRAIN SIZE: 7.1

FERRITE: <4%

MAGNETIC PARTICLE F/S = 0/0

KNOWINGLY RECORDING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.

SS 4320

MELT SOURCE: UNIVERSAL/DUNKIRK

CHEMICAL BALANCE IS Fe

MATERIAL MELTED IN THE USA BY UNIVERSAL STAINLESS & ALLOY PRODUCTS, BRIDGEVILLE, PA

MATERIAL MANUFACTURED IN THE USA

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

JUN 13 2012

BY   
CHIP SANDOVAL QA MANAGER

/S/John M. Berry

/S/William Bennett

06/12/12

Prepared by: John M. Berry, QA

W.A. Bennett, Metallurgist

Date

Melting and manufacturing in compliance with DFARS 252.225-7014 ALT 1. Material by USAP in Bridgeville, PA, USA. Certification LAW DFN 50 049 / EN 10204 3.1. Material complies with EU directive 2002/95/EC (RoHS). The test results shown are certified to be a correct statement of records that were derived from testing samples of the material. Results meet applicable specifications. No welding was performed on the material supplied on this order. Material is free from mercury contamination. Material is of NAFTA origin. This material was produced under the Dunkirk Specialty Steel Quality Management System documented in QP Manual, Rev. 6 dated 1/6/2012, conforming to NCA-3800. Material testing was performed as applicable in accordance with ASTM A370, A804, E8, E10, E18, E23, E45, E112, E139, E381, E572, E1019, STP-CHEM-GDS, E1444, & AMS 2315. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal law.

**DETRAY PLATING WORKS**  
10405 EAST 11TH STREET  
INDEPENDENCE, MO 64052  
PH: 816-252-8411  
FAX: 816-252-8527

# Invoice

DATE

INVOICE #

1/31/2014

176524

BILL TO:

Ott Brothers Manufacturing Company,  
Inc.  
2455 South Leonine Road  
Wichita, KS 67217

SHIP TO:

Ott Brothers Manufacturing Company,  
Inc.  
2455 South Leonine Road  
Wichita, KS 67217

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.	PROJECT
1710	Net 30		1/31/2014	U.P.S.		
QUANTITY	ITEM CODE	DESCRIPTION			PRICE EACH	AMOUNT

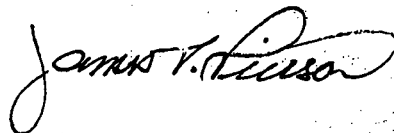
3 41200-Pass... 55 pcs.-AN44-C7A-Mfg  
Lot#44682C-Passivate per SAE  
AMS 2700 Rev. E-Mtl 431  
SS/HT#RC27-32

Cert.

Certification of Compliance:

This is to certify that the parts listed  
above have been passivated per  
Spec. SAE AMS-2700, Rev.E.

James T. Pierson, Vice-President



DE TRAY PLATING WORKS

Thank you for your order!!!





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
10	100	EA	AN525-10R22		59228	MAC FASTENERS	ORPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

**Packing List****Bill B/E AEROSPACE CONSUMABLES MGMT**

To: 10000 NW 15TH TERRACE  
MIAMI, FL 33172

**Ship B/E AEROSPACE CONSUMABLES MGMT**

To: 9835 NW 14th Street  
Miami, FL 33172  
United States

**Shipment No:** 56811  
**Shipment Date:** 01/03/13  
**Ship Via:** United Parcel Service  
**Order Number:** 43471  
**Order Date:** 10/17/11

**Customer Code:** BE AEROSPACE  
**Phone:** (305) 925-2600  
**PO Number:** 0BLW46  
**Terms:** Net 30 Days

LOT #59228

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	13,423	14,000	0		M	AN525-10R22 Screw, washer head		59228

**MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0BLW46

PART NUMBER: AN525-10R22

REV: 2

LOT NUMBER: 59228

MANUFACTURED QUANTITY: 14,000

MILL HEAT NUMBER: 10126390

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 01/02/13

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

<b>CUSTOMER</b> B/E AEROSPACE	<b>PO NUMBER</b> 0BLW46	<b>MFG QUANTITY</b> 14,000	<b>DATE</b> 01/02/13
<b>PART NUMBER</b> AN525-10R22	<b>REV</b> 2	<b>LOT NO</b> 59228	<b>PROCUREMENT SPEC</b> NASM7839

<b>MATERIAL</b> TYPE 4037				<b>MATERIAL SPECIFICATION</b> AMS6300				<b>MILL HEAT NUMBER</b> 10126390			<b>SUPPLIER</b> WIRE TECH		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.36	.25	.75	.008	.016	.10	.05	.17	.23					
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
3,200
3,160
3,160
3,150
3,170
3,180
3,160
3,180
MIN. REQ. 2490

DOUBLE SHEAR STRENGTH POUNDS / PSI
4,780
4,790
4,760
4,760
4,750
4,780
4,770
4,760
MIN. REQ. 4250

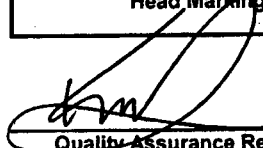
HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 8
ACTUAL RESULTS 26-28 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS
Magnetic Particle Inspection per ASTM E1444 <input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417 <input type="checkbox"/>
Recess Torque Test <input type="checkbox"/>
Head Marking <input checked="" type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 01/02/13

PO NUMBER: 0BLW46

MANUFACTURED QUANTITY: 14,000

LOT NUMBER: 59228

MATERIAL: TYPE 4037

PART NUMBER: AN525-10R22

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 8

HARDNESS: 26-28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

December 10, 2012

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

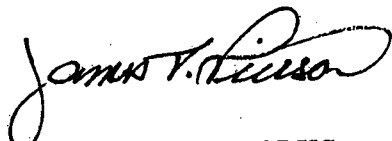
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-  
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 3. Please reference our  
Invoice# 166076 dated 12/10/2012 for:

Lot#-59228

P.N.-AN525-10R22

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



# WireTech, Inc.

6440 E. Canning Street  
Los Angeles, CA 90040  
Phone (323) 722-4933  
Fax (323) 721-2738

SOLD TO

Mac Fasteners  
1110 Enterprise Street  
Ottawa, KS 66067  
USA

WORK ORDER  
**088611**

## CERTIFICATION

HEAT NO.  
**10126390**  
SALES ORDER / RLS  
**842886 / 1**  
ISO 9001-2000 REGISTERED



MECHANICAL TESTING  
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. <b>68218</b>	CUSTOMER PART <b>4037-187</b>	QUANTITY <b>21,492 Lbs</b>	CARRIERS <b>21</b>	LADING NO <b>00094740</b>	SHIPMENT DATE <b>01/19/2012</b>			
<b>SPECIFICATION M044037-101870A</b> <b>A-4037, AQ, SKFG, CHQ WIRE, SAIP Zinc Phosphate, Lime &amp; Stearate Coating, Size:0.1865/0.1875</b> <b>Specifications: AMS2301H, AMS6300D</b>								
<b>CERTIFICATION REQUIREMENTS</b>								
<b>Chemical Properties</b>								
<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Cu</b>	<b>Ni</b>	<b>Cr</b>	<b>Mo</b>
<b>.36</b>	<b>.25</b>	<b>.75</b>	<b>.008</b>	<b>.016</b>	<b>.10</b>	<b>.05</b>	<b>.17</b>	<b>.23</b>
<b>Physical Properties</b>								
<b>Grain Size Jominy 1</b>		<b>Jominy 2</b>		<b>Inclusions Macro</b>	<b>Cleanliness</b>	<b>Mill Source</b>		
<b>6 J1=54</b>		<b>J5=34</b>		<b>S2-R1-C2</b>	<b>GOOD</b>	<b>F&amp;S=0</b>		<b>Charter</b>
<b>Country of Origin</b>								
<b>USA - DFAR Compliant</b>								
<b>Mechanical Properties</b>								
<b>TEST</b>	<b>UNITS</b>					<b>Results</b>		
<b>Tensile Strength</b>	<b>KSI</b>					<b>77.9</b>		
<b>Yield Strength</b>	<b>KSI</b>					<b>66.2</b>		
<b>% Elongation</b>	<b>%</b>					<b>27</b>		
<b>% Reduction of Area</b>	<b>%</b>					<b>69.7</b>		
<b>Rockwell Hardness B Scale</b>	<b>HRB (s)</b>					<b>82</b>		
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.      DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, &amp; 225.003(9)</p> <p>"LATEST REVISIONS OF ASTM"      Material is free of mercury, radium, or alpha contamination.</p>								



**CHARTER  
STEEL**

A Division of  
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road  
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

**CHARTER STEEL TEST REPORT**  
**Reverse Has Text And Codes**

Wiretech Incorporated  
6440 East Canning Street  
Los Angeles, CA-90040  
Kind Attn :Cert To Contact

Qual P.O.	6634-1
Customer Part #	4037C1A070-C
Charter Sales Order	70020140
Heat #	10126390
Ship Lot #	4080705
Grade	4037 R SK FG AQ 9/32
Process	HRSA
Finish Size	9/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10126390												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM	.36	.75	.008	.016	.25	.05	.17	.23	.10	.007	.001	
%Wt												
	AL	N	B	TI	NB							
	.028	.0070	.0003	.002	.002							
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	54	53	50	41	34	30	28	27	26	25	23	22
	JOM13	JOM14	JOM15	JOM16	JOM18							
	22	21	21	21	20							

JOMINY SAMPLE TYPE ENGLISH = C JOMINY LAB = 0358-01  
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1  
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00  
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00  
CHEM. DEVIATION EXT. -GREEN =

Test Results of Rolling Lot# 1037519						
REDUCTION RATIO = 488:1						
Test Results of Processing Lot# 4080605, 4080705						
	# of Tests	Min Value	Max Value	Mean Value		
TENSILE	1.0	73.2	73.2	73.2	TENSILE LAB = 0358-02	
REDUCTION OF AREA	1	67	67	67	RA LAB = 0358-02	

NUM DECARB = 1 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003  
CP SPHERO % LAB = 0358-02 NUM SPHERO = 1 SPHERODIZATION = 85.0

Specifications: Manufactured per Charter Steel Quality Manual Rev 9.08-01-09  
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:  
Customer Document = COP 3010 Revision = M Dated = 12-MAR-03

Additional Comments:

Charter Steel  
Saukville, WI, USA

Rem: Load1,Fax0,Mail0



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

*Janice Barnard*  
Janice Barnard  
Manager of Quality Assurance  
06/08/2011





# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LCT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
14	400	EA	AN970-4		U6157	ANILLO INDUSTRIES	10630		

  
Jason Lewis  
Vice President of Quality

06/16/14

DATE: 12/09/08

TIME: 12:44:58

AIRSUPPLY DIVISION  
7Q ROANOKE BOND/STAGE WHSE  
RECEIPT TRAVELLER: A1183130

PAGE: 3

WSID: RNK2PTT1

S/D

VENDOR: 1585  
ANILLO INDUSTRIES INC.

PURCHASE ORDER: 933104

DATE RECEIVED: 12/09/08

BUYER: SRR



RECEIVING:

XDOCK - RESUPPLY

LINE QUANTITY PART NO./DESCRIPTION  
ITEM RECEIVED

1 194878 AN970-4  
WASHER



VENDOR ITEM#: DASH GROUP: Source Delegate

QUALITY PROCUREMENT CLAUSES: ABCEFHPUV

REV: 6

Std Pkg Size:

QUALITY ASSURANCE:

DEPT. WORK OPERATION/DESCRIPTION  
NO. CENTER NUMBER

SCHEDULE  
DATE

SAMPLE SIZE	QUANTITY ACCEPTED	QUANTITY REJECTED	MANUFACTURER LOT	BATCH NO.	CURE DATE	HPG LOT #
----------------	----------------------	----------------------	---------------------	--------------	--------------	-----------

5D 194878 0 46197

Quality Documents: A Manufacturer's C of C  
E Chem-Phys or Material Cert  
~~F Process Certs per QAP33 & Dwg~~  
Manufactured by: 1585 ANILLO INDUSTRIES INC.

INSPECTION NOTES:

0812025112  
"5114- "5137  
"5144- "5167  
"5170 - "5193  
"5196 - "5219

RCT

4 5242

STAGING: WAREHOUSE NUMBERS

LOCATION ADDRESS

QUANTITIES

LOC: ATCUST A23B7 A66B1 DM0066 DR0178 DS0190 F396 LOSTLV UNK001 W1045 W11564 02AA5B 02AA6A 02A

<<< End of Form >>>



**ANILLO Industries, Inc.**

2090 NORTH GLASSSELL STREET, ORANGE, CA 92665-3391 USA

PLEASE REMIT TO

P.O. BOX 5586 ORANGE, CA 92663-5586 USA

(714)637-7000 (562)924-6632 FAX(714) 637-3022

ISO 9001  
CERTIFIED  
SYSTEM**452156****Packing List &  
Certification**WE ACCEPT  
VISA/MASTER/DISCOVER/AMEX

<b>SOLD TO</b> HONEYWELL HARDWARE PROD.GRP. P. O. BOX 981157 ATTN: ACCOUNTS PAYABLE DEPT.  EL PASO, TX 79998	<b>1166</b>	<b>SHIP TO</b> HONEYWELL CONSUMABLES SOLUTIONS 700 HENRIETTA CREEK ROAD  ROANOKE, TX 76262-6398	<b>E</b>
---	-------------	--	----------

DATE ORDER REC'D <b>08/29/2008</b>	ORDER NUMBER <b>0933104</b>	INVOICE DATE	SHIPPED VIA <b>UPS 9AV627</b>	TERMS 1% 10 DAYS, NET 30
ITEM	ORDERED	SHIPPED	DESCRIPTION	NET WEIGHT

1 200,000 **AN970-4 (1.125 +/-0.010 .265 +/-0.010 .063 +/- MT )**  
REV 6 /LOT#T9343/U6197 /QCR:1,2,4,6,8,15,16,99,

ECCN: 9A991 Schedule B#: 7318.22.0000 COO: US NLR

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

ANILLO IND. (CAGE CODE:10630)

PART # : AN970-4

QUANTITY : 5122

P.O.# : 0933104

LOT # : T9343

ITEM # : 1 REV. 6

PACKED BY: LG

ANILLO IND. (CAGE CODE:10630)

PART # : AN970-4

QUANTITY : 194878

P.O.# : 0933104

LOT # : U6197

ITEM # : 1 REV. 6

PACKED BY: LG

&lt;&lt; The export classification appears above. You are responsible for all related export license requirements. &gt;&gt;

We certify that: 1. Item number 1 above is manufactured in accordance with the material and processing specifications of this order.  
2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.  
No good to be returned without written authorization. All claims for defective material must filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

&lt;&lt; R.M.A.# REQUIRED FOR RETURNS &gt;&gt;

**Certification**

Honeywell Source Accepted:



Stamp Impression

Date

11-4-08

RMRA #

Hardware Product Group  
Source DelegatedBy Mendoza Date 11-4-08

NCE

BY Ben Omidwar  
Ben Omidwar, Quality Assurance Manager

FI 4.03.05

## CERTIFIED TEST REPORT



### Calstrip Steel Corporation

7140 Bandini Blvd. • Los Angeles, CA 90040-3388  
(323)726-1345 • Fax (323)722-8269

<b>Customer:</b> HIGHTOWER METAL PRODUCTS <b>Address:</b> P.O. BOX 5586 ORANGE, CA 92613-5586	<b>Order Number:</b> S36102 <b>Customer PO:</b> 27880 <b>Shipped Date:</b> 09/11/2007 <b>Packlist ID:</b> 59618
<b>Part ID:</b> H280.014-CS <b>Description:</b> 1008 CR .062 X 3.630 X COIL <b>Drawing #:</b> H280.014 <b>Rev #:</b>	<b>Material Spec:</b> 1008 ASTM A109-03

**HeatID:** 038917

### CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.0160	0.1500	0.0120	0.0060	0.0030		0.0100			
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
	0.0010			0.0350				0.0020	

### MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test	Skid Numbers	# of Coils	Weight
			HRB 55	OK	W45737-1	4	2,700
					W45737-2	4	2,716
					W45737-3	4	2,716
					W45737-4	4	2,660
						16	10,792
Grain Size	Olsen Test	Spher%	Decarb	Reduct %			

**Comment:**

UG197  
AN970-4



All work on this order has been performed in accordance with the Company's Quality Assurance Manual.

MARIO VARGAS

Technical Services

Form #:

Print Date: 9/11/2007

Page: 1



PHe

# **Certification**

HIGHTOWER PLATING & MFG. CO.  
An affiliate of Anillo Industries, Inc.  
2090 North Glassell st.  
Orange, CA. 92865-3391  
(714) 637-9110

*This is to certify that the below listed parts were processed per the applicable specification listed below.*

*Test reports and procedures governing this process are on file and subject to examination.*

*All parts are inspected for plating thickness by use of a X-ray. All instruments are currently calibrated and subject to examination.*

## **CADMIUM PLATE AMS-QQ-P-416**

Type	Class	Thickness	Revision
II	2	.000523	B

Job Number:	U6197	Quantity:	53,610	Visual:	Y
Part Number:	AN970-4			Adhesion:	Y
Description:	PARTIAL				

Date: 10/24/2008

Authorized by: Maribel c.



SPC

Stamp:



# Cert'f'cat'on

HIGHTOWER PLATING & MFG. CO.  
An affiliate of Anillo Industries, Inc.  
2090 North Glassell st.  
Orange, CA. 92865-3391  
(714) 637-9110

*This is to certify that the below listed parts were processed per the applicable specification listed below.*

*Test reports and procedures governing this process are on file and subject to examination.*

*All parts are inspected for plating thickness by use of a X-ray. All instruments are currently calibrated and subject to examination.*

## CADMIUM PLATE AMS-QQ-P-416

Type	Class	Thickness	Revision
II	2	.000480	B

Job Number: U6197      Quantity: 60,160

Visual: Y

Part Number: AN970-4

Adhesion: Y

Description: FINAL/PARTIAL

Date: 10/27/2008

Authorized by: Maribel c.

Stamp:



SPC



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MPR DATE	EXP DATE
9	50	EA	AN5-13A		71604	MAC FASTENERS	ORPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

***Packing List*****Bill** B/E AEROSPACE CONSUMABLES MGMT

To: 10000 NW 15TH TERRACE  
MIAMI, FL 33172

**Ship** B/E AEROSPACE CONSUMABLES MGMT

To: 9835 NW 14th Street  
Miami, FL 33172  
United States

**Shipment No:** 62758**Shipment Date:** 03/11/14**Ship Via:** United Parcel Service**Order Number:** 50200**Order Date:** 02/08/14**Customer Code:** BE AEROSPACE**Phone:** (305) 925-2600**PO Number:** 0VBL84**Terms:** Net 30 Days

LOT #71604

<u>Item</u>	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>	<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
1	10,101	10,961	0		M	AN5-13A Bolt, machine-- Aircraft	71604



**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0VBL84

PART NUMBER: AN5-13A

REV: 2

LOT NUMBER: 71604

MANUFACTURED QUANTITY: 12,121

MILL HEAT NUMBER: 8193290

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC  
FASTENERS within the United States, and were processed in accordance with all applicable drawings and  
specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company - SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 03/11/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0VBL84	MFG QUANTITY 12,121	DATE 03/11/14
PART NUMBER AN5-13A	REV 2	LOT NO 71604	PROCUREMENT SPEC NASM6812

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 8740				MIL-S-6049/AMS6322				8193290			JOHNSTOWN		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.40	.24	.77	.010	.010	.10	.52	.58	.26	.002			.023	
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
		.0060							.005				

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
9,050	
9,100	
9,070	
9,110	
9,090	
MIN. REQ.	6,500

DOUBLE SHEAR STRENGTH POUNDS / PSI	
12,600	
12,570	
12,480	
12,530	
12,510	
MIN. REQ.	11,500

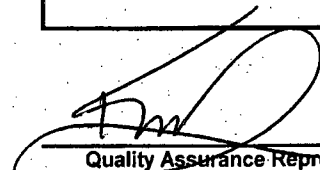
HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	
27 - 29 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 03/11/14

PO NUMBER: 0VBL84

MANUFACTURED QUANTITY: 12,121

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 71604

MATERIAL: TYPE 8740

PART NUMBER: AN5-13A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27 - 29 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

March 10, 2014

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

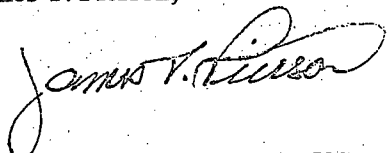
Subject: Certification

This is to certify that the following parts have been cadmium plated per QQ-P416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice# 177562 dated 3/10/2014 for:

Lot#-71604

P.N.-AN5-13A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



# Johnstown Wire Technologies

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
847635

**TEST REPORT**  
LOT NUMBER  
K-8193290  
SALES ORDER / RLS  
002319 / 4

SOLD TO

Mac Fasteners, Inc.  
C/O TD Logistics Inc.  
14505 W 100th Street  
Lenexa, KS 66215  
USA



CUSTOMER P.O. 50516	CUSTOMER PART	QUANTITY 9,986 LBS	COILS 5	LADING NO 00119891	SHIPMENT DATE 09/23/2013							
<b>SPECIFICATION Macfast-87309</b> <b>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation</b> <b>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod</b> <b>Spheroidize Annealed In Process Heavy Phos &amp; Light Lube Ctd</b> <b>Size: .3095 +.001 -.000</b>												
<b>CERTIFICATION REQUIREMENTS</b>												
<b>Chemical</b>												
C .40	Mn .77	P .010	S .010	Si .24	Al .023	Ni .52	Cr .58	Mo .26	Cu .10	V .002		
Cb .000	Ti ???????	N .0060	Sn .005									
<b>Physical</b>												
AMS 2301 0000	J1 56	J10 40	J11 38	J12 36	J2 55	J3 55	J5 53	J4 54	J6 52	J7 50	J8 46	J9 43
MacroClean E-381 111												
<b>Mechanical</b>												
<b>TEST</b>	<b>UNITS</b>	<b>HIGH</b>	<b>LOW</b>	<b>AVERAGE</b>								
Tensile Str	Lbs/SqIn	83000	82000	83000								
RA Per Cent	Percent	70.6	70.6	70.6								
Decarb FFD	Inches	.000	.000	.000								
Surface def. depth	Inches	.001	.001	.001								
<b>Rod / Melt Source</b>												
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes									
End of Certification												

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*Daniel J. Malik*  
Daniel J. Malik Director of Quality Assurance

5-1



CERTIFICATE OF TESTS

1807 EAST 28TH ST.  
PHONE: 330-438-5580LORAIN, OH 44055  
FAX: 330-438-5695

REPUBLIC STEEL

6/24/2013  
2:46:00 PM  
PAGE 1 OF 2PURCHASE ORD: 84084  
PART NUMBER: FXT40AA-.375  
ORDER NUMBER: 1547434 - 01  
HEAT: 8193290PURCHASE ORDER DATE: 3/4/2013  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 4927-93  
REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
C/O C & BL RAILROAD  
TRACK 629  
JOHNSTOWN, PA 15901----- MATERIAL DESCRIPTION -----  
HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &  
UT WAIVED EP-AISI-8740-H FINE GRAIN VACUUM DEGAUSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
SIZE: RDS .3750 DIAM X COIL  
RDS 9.5250MM DIAM X COIL----- LADLE CHEMISTRY % -----  

C	MN	P	S	SI	CU	NI	CR
0.40	0.77	0.010	0.010	0.24	0.10	0.52	0.58
V	MO	SN	AL	B	CB	N	
0.002	0.26	0.005	0.023	0.0000	0.000	0.0060	

  
----- CALCULATED TESTS -----

REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

----- SEMI - FINISHED RESULTS -----

JOMINY HARDNESS TEST SAE J406/ASTM A255  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
56 55 55 54 53 52 50 46 43 40 38 36 36 34 33 32 31 30 30 29 29 29 28 28MACRO ETCH TEST ASTM E381/MIL STD 430  
ETCHANT: HCL TEMPERATURE: 170  

	S	R	C
AVG	1	1	1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300  

	IND	AVG	IND	AVG
PCE 03	0	0	0	0

----- FINISHED SIZE RESULTS -----  
DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
PCE 6581	0.002	0	0.002

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



## CERTIFICATE OF TESTS

1807 EAST 28TH ST.  
PHONE: 330-438-5580LORAIN, OH 44055  
FAX: 330-438-5695

REPUBLIC STEEL

6/24/2013  
2:46:00 PM  
PAGE 2 OF 2PURCHASE ORD: 84084  
PART NUMBER: FXT40AA-.375  
ORDER NUMBER: 1547434 - 01  
HEAT: 8193290PURCHASE ORDER DATE: 3/4/2013  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 4927-93  
REVISION: 1CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX  
NOTESCHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS; ASTM E415, LBL10129, LBL10130, ASTM E1019,  
LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

NOTES (CONTINUED)  
ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF  
SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED  
AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE  
DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

SOURCE INFORMATION  
MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 1177.6  
END OF DATA CC END OF DATAWITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPYG. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REP#	LOT-NUMBER	MANUFACTURER	CCODE	CURE DATE	EXP DATE
16	400	EA	NAS1515H3		C128765	SUPERIOR WASHER AND	4WUG7	01/14/13	

  
Jason Lewis  
Vice President of Quality

06/16/14



ORDER NUMBER: C128765

**SUPERIOR WASHER AND GASKET CORP.**170 Adams Avenue, P.O. Box 5407  
Hauppauge, New York 11788  
PHONE: (631) 273-8282  
FAX: (631) 273-8088**SUPERIOR WASHER AND GASKET CORP.**170 Adams Avenue, P.O. Box 5407  
Hauppauge, New York 11788  
PHONE: (631) 273-8282  
FAX: (631) 273-8088S ACCT NO. 6170  
O B/E AEROSPACE  
L P.O. BOX 025263  
DT MIAMI FL 33102  
OS ACCT NO. 6170  
H B/E AEROSPACE  
I 9835 NW 14TH STREET  
PT MIAMI FL 33172  
O

PURCHASE ORDER NUMBER OLMS53		TERMS 1% 10 NET 90	F.O.B. ORIGIN	DST	VO
SPECIAL INSTRUCTIONS FEDX#033101490 /OVR150#FEDXFRT					
QUANTITY ORD	DESCRIPTION	UNIT PRICE	QTY. SHIPPED	AMOUNT	
1. 10000	NAS1515-H3 REV 5 NYLON 6/6 L-P-410 .438 X .203 X .063 +.020-.005 +- .005 +- .010 SPECIAL CHARGES: MSDS SHEET SHIPPING DATES: 01/14/13		11000 <i>1ctn</i> <i>4#</i>	.00	
PAGE : 1					

\* COMPLETED SHIPMENT \*

PACKING SLIP

ORDER NUMBER: C128765

**SUPERIOR WASHER AND GASKET CORP.**

170 Adams Avenue, P.O. Box 5407  
 Hauppauge, New York 11788  
 PHONE: (631) 273-8282  
 FAX: (631) 273-8088

**SUPERIOR WASHER AND GASKET CORP.**

170 Adams Avenue, P.O. Box 5407  
 Hauppauge, New York 11788  
 PHONE: (631) 273-8282  
 FAX: (631) 273-8088

S ACCT NO. 6170  
 O B/E AEROSPACE  
 L P.O. BOX 025263  
 D

T MIAMI FL 33102  
 O

S ACCT NO. 6170  
 H B/E AEROSPACE  
 I 9835 NW 14TH STREET  
 P

T MIAMI FL 33172  
 O

PURCHASE ORDER NUMBER OLMS53		TERMS 1% 10 NET 90	F.O.B. ORIGIN	DST	VO
SPECIAL INSTRUCTIONS FEDX#033101490 /OVR150#FEDXFRT					
QUANTITY ORD	DESCRIPTION	UNIT PRICE	QTY. SHIPPED	AMOUNT	
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PAGE : 1					

**CERTIFICATION OF COMPLIANCE**

WE CERTIFY THAT THE ABOVE MATERIAL IS MANUFACTURED IN THE U.S.A. AND CONFORMS TO THE SPECIFICATIONS INDICATED IN DRAWINGS AND SPECIFICATIONS ON SAID PURCHASE ORDER AND PARTS ARE MERCURY FREE.

By

*Richard Anderson*  
 QUALITY CONTROL MANAGER



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
3	50	EA	AN3C16A		70867	MAC FASTENERS	ORPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

***Packing List*****Bill** B/E AEROSPACE CONSUMABLES MGMT**To:** 10000 NW 15TH TERRACE

MIAMI, FL 33172

**Ship** B/E AEROSPACE CONSUMABLES MGMT**To:** 9835 NW 14th Street

Miami, FL 33172

United States

**Shipment No:** 62795**Shipment Date:** 03/13/14**Ship Via:** United Parcel Service**Order Number:** 49775**Order Date:** 12/06/13**Customer Code:** BE AEROSPACE**Phone:** (305) 925-2600**PO Number:** 0TLR82**Terms:** Net 30 Days

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
1	10,000	10,000	0		M	AN3C16A Bolt, machine-- Aircraft	70867

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0TLR82

PART NUMBER: AN3C16A

REV: 2

LOT NUMBER: 70867

MANUFACTURED QUANTITY: 10,000

MILL HEAT NUMBER: 568597

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC  
FASTENERS within the United States, and were processed in accordance with all applicable drawings and  
specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is an AS9100C Registered Company- SAI GLOBAL - 0058029  
Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 03/13/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0TLR82	MFG QUANTITY 10,000	DATE 03/13/14
PART NUMBER AN3C16A	REV 2	LOT NO 70867	PROCUREMENT SPEC NASM6812

MATERIAL TYPE 431				MATERIAL SPECIFICATION ASTM A493				MILL HEAT NUMBER 568597			SUPPLIER CARPENTER		
C .17	Si .48	Mn .65	P .019	S .001	Cu	Ni 1.58	Cr 15.9	Mo	V	B	Fe	Al	Ti
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
3,510
3,480
3,510
3,500
3,490
MIN. REQ. 2,210

DOUBLE SHEAR STRENGTH POUNDS / PSI
4,800
4,790
4,800
4,800
4,780
MIN. REQ. 4,250

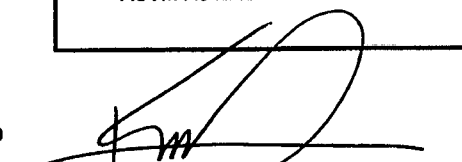
HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 26 - 28 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22	System <input type="checkbox"/> 23

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 03/13/14

PO NUMBER: 0TLR82

MANUFACTURED QUANTITY: 10,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 70867

MATERIAL: TYPE 431

PART NUMBER: AN3C16A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 26 - 28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# DE TRAY

## Plating Works

Specialized Electro-Plating and Polishing  
*Nickel*  
*Copper*  
*Decorative Chrome*  
*Satin Chrome*  
*Zinc*  
*Cadmium*  
*Passivate*  
*Bright Dip*  
*Strip Copper*  
*Descale*

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/ASTM-A380

CUSTOMER: Mac Fasteners Lot#: 70867  
PART NUMBER: AN3C16A  
PROCUREMENT SPECIFICATION: n/a  
OTHER CONTRACTURAL REQUIREMENTS:  
MATERIAL: 431  
QUANTITY: 175 lbs  
INVOICE NUMBER: 177613

### Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME: James T. Lison

JOB TITLE: VICE-PRESIDENT

DATE: 3/11/2014



# CERTIFICATE OF TESTS

# ABNAHMEPRUEFZEUGNIS

# CERTIFICAT DE CONTROLE

CERT SERIAL# 000879077



## CARPENTER

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

06/10/13

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 1

MAC FASTENERS INC

1110 E. ENTERPRISE  
OTTAWA KS 66067

BOL

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
81050	W72447	06/10/13	2395.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 568597

PRODUCT DESCRIPTION: TYPE 431 COLD FINISH SEAM FREE ANNEALED C HDG CL K1 HVY  
----- CU TENSILE MAX 100.0 KSI

SPECIFICATION: ASTM-A493-09  
-----

SIZE 0.187500 IN. ( 4.76 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.17	0.65	0.48	0.019	0.001	15.9
NI (XRF)					
1.58					

TENSILE AS SHIPPED, KSI (MPA) 94.5 ( 652)

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

GARY BROWN  
MANAGER - SPECIFICATIONS/CERTIFICATIONS  
CARPENTER TECHNOLOGY CORPORATION

*Gary Brown*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgetragenen Daten oder Zertifizierungen.  
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

**PERMASWAGE**

**PERMASWAGE - Nelson Aerospace**  
A Designed Metal Connections, Inc. Company  
10310 Norris Avenue  
Pacoima, CA 91331  
Ph: 818-686-0900  
Fax: 818-686-0181

Pack Slip: 48533

Sales Order: 29800

Page: 1 of 1

**Customer  
Packing Slip****Ship To:**

B/E AEROSPACE CONSUMABLES MANAGEM  
9835 NW 14TH ST  
MIAMI FL 33172  
USA

Verify AES requirements prior to shipment.

**Sold To:**

B/E AEROSPACE CONSUMABLES MANAG  
PO BOX 025263  
MIAMI FL 33102-5263  
USA

Verify AES requirements prior to shipment.

Fax: 305-507-7194

Ship Date: 8/23/2013

Ship Via: FEDEX GROUND

F.O.B.: EX WORKS

Cust P.O.: 0RLR87

Salesperson: JIM THOMPSON

PO Line	Planned Qty	Shipped Qty	Back Order Qty	Part Number Description	Rev	Lot Number
---------	-------------	-------------	----------------	-------------------------	-----	------------

FEDEX GRD # 0331-0149-0

RELEASE # BR500RLR87  
5,000

600

4,400.00 MS20819-12J

F00020481-21038

SLEEVE

Sale Order / Line / Release: 29800 / 1 / 1

Customer PO Number: 0RLR87

**Certificates Required:**

Standard Certification: No  
Full Certifications: Yes

First Article Inspection: No  
Chemical/Physical: No

Material Certificate: No  
FAIR per AS9102: No

**Product is compliant to DFAR 252.225-7009****1 BOX 19 LBS 10X8X6**

**AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00**  
**Products listed have not been exposed to mercury or mercury compounds during the manufacturing process.**

**!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE - NELSON AEROSPACE SALES @ 818-686-0900 !!**


WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STANDARDS ACT ON 8/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM).

**Certification of Conformance**

NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABILITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABILITY IS BASED UPON CONTRACT RIGHTS, NEGLIGENCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECEIPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH.

  
Manager of Quality Assurance or Designee

555440



**9356<sup>1/2</sup> San Fernando Road, Unit B • Sun Valley, CA 91352**

**(818) 504-0677 • FAX (818) 504-1559**

**TERMS: net 30**MATERIAL / HEAT TREAT / STATUS OF PARTS 304**TOTAL**

PASSIVATE MIL-STD-753C METHOD 101/AMS2700E METHOD 1 TYPE 6 CLASS 1

Other

## MAGNETIC SPECIFICATIONS

### Acceptance Criteria

Reason Rejected

### FLUORESCENT PENETRANT SPECIFICATIONS

### Acceptance Criteria

Season Rejected

QC NOT Level 2: REYES HERNANDEZ

**LOT: F00020481-21038**

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspection & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

*Russell Howard*  
CERTIFIED LEVEL II INSPECTOR

## CERTIFICATION / TEST / REPORT

Order No: 3370165  
Time 06:39:29

**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

N00580  
Cust. NO.: 21038-FAX  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

NELSON AEROSPACE INC  
10310 NORRIS AVE  
\*\*ONE PO # ORDER\*\*\*\*\*  
PACOIMA CA 92683-5218

03/05/12

QTY	-DESCRIPTION-	-ITEM CODE-	-HEAT NUMBER-
	CG 304 ANN AMS 5639 COND A PINK/WHITE		
97	BARS 1"RD	12'RL 42680	742242 ✓
	*ONE HEAT		

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes  
\*WHEN APPLICABLE

*Chp Sandoval*  
CHP SANDOVAL - O.C. MANAGER

LOT: F00020481-21038

CERTIFICATE OF TESTS  
CERT SERIAL# 000791570



Talley Metals Technology, Inc.  
205 Talley Metals Lane  
McBee, SC. 29101 Tel: (610) 208-2000 (800) 338-4592

09/20/11  
CUSTOMER/BESTELLER/CLIENT  
FRY STEEL COMPANY

PO BOX 4048  
SANTA FE SPRING CA 90670

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROL

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 2

HVL

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DAUM/DATE	WEIGHT/GEWICHT/POID
46638-10-007	W43552	09/20/11	10629.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 742242 ✓ UNS NUMBER S30403

PRODUCT DESCRIPTION: TYPE 302/304/304L STAINLESS ANNEALED CENTERLESS GROUND  
----- PART NUMBER: S# 42680

SPECIFICATION: FRY STEEL 304LT2A (04/30/03)  
-----  
QQ-S-763P (06/27/96)  
MIL-S-7720A AMD 2 (07/26/74) (302 ONLY)  
AMS 5639 REV H (07/02) (304 ONLY)  
AMS 5647 REV J (05/11) (304L ONLY)  
ASTM-A193-11 GRD B8 (CL 1 EXCEPT PARA 7.3.1) (304 ONLY)  
ASTM-A276-10  
ASTM-A320-11 GRD B8 (CL 1 EXCEPT PARA 4.3.1) (304 ONLY)  
ASTM-A479-10A  
ASTM-A484-11  
ASME-SA479 2010 EDITION  
AMS-S-7720 (10/07) (302 ONLY)  
AMS-QQ-S-763B (08/06)

SIZE 1.000000 IN. ( 25.40 MM) RD BAR

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.019 ✓	1.70 ✓	0.62 ✓	0.026 ✓	0.026 ✓	18.24 ✓
NI (XRF)	MO (XRF)	CU (XRF)	CO (XRF)	N (FUS)	
8.48 ✓	0.42 ✓	0.32 ✓	0.40 ✓	0.070 ✓	

INTERGRANULAR CORROSION TESTED TO ASTM-A262, PRACTICE E - ACCEPTABLE.  
ANNEALED MICROSTRUCTURE FREE FROM CONTINUOUS GRAIN BOUNDARY CARBIDE  
PRECIPITATION (NETWORK).

THIS MATERIAL CONFORMS TO THE TECHNICAL REQUIREMENTS OF THE AMS SPECIFICATION REFERENCED ABOVE.  
THIS MATERIAL IS CAPABLE OF CONFORMING TO THE TECHNICAL REQUIREMENTS OF ASTM A 182.

EDDY CURRENT TEST PERFORMED

DISCS MACROETCHED AND APPROVED

GRAIN SIZE PER ASTM E112: 4

LOT: F00020481-21038

CONTINUED ON NEXT PAGE

**CERTIFICATE OF TESTS**

**CERT SERIAL# 000791570**



**TALLEY METALS**

**A Carpenter Company**

Talley Metals Technology, Inc.

205 Talley Metals Lane

McBee, SC. 29101 Tel: (610) 204-2000 (800) 338-4592

09/20/11

CUSTOMER/RESISTELLER/CLIENT

**FRY STEEL COMPANY**

**PO BOX 4048**

**SANTA FE SPRING CA 90670**

**ABNAHMEPRUEFZEUGNIS**

**CERTIFICAT DE CONTROL**

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING, FEDERAL LAI. TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

**SELLER/VERKÄUFER/VENDEUR PAGE 2 OF :**

**HVL**

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DAUM/DATE	WEIGHT/GEWICHT/POI
46638-10-007	W43552	09/20/11	10629.001

**HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :**

✓ 742242

**UNS NUMBER S30403**

(T) RANSVERSE (L) ONGITUDINAL  
YIELD STRENGTH, (0.20 %) KSI (MPA)  
TENSILE STRENGTH, KSI (MPA)  
ELONGATION IN 2.00", %  
REDUCTION OF AREA, %  
HARDNESS, HBW -

✓ L  
✓ 46.3 { 319  
✓ 87.5 { 603  
✓ 60.0  
✓ 74.0  
165.0



**NO WELD REPAIR PERFORMED**

**MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009. THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 29 DATED 09/01/10.**

**WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN50049)**

**TIMOTHY DUVAL  
QUALITY ASSURANCE REP.  
CARPENTER TECHNOLOGY CORPORATION**

**FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED**

**OCT 05 2011**

BY   
CHIEF SANITARY & Q.C. MANAGER

**LOT: F00020481-21038**

*Timothy M. Duval*



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
11	50	EA	AN6-40A		63128	MAC FASTENERS		0RPT4	

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

***Packing List*****Bill B/E AEROSPACE CONSUMABLES MGMT****To: 10000 NW 15TH TERRACE****MIAMI, FL 33172****Ship B/E AEROSPACE CONSUMABLES MGMT****To: 9835 NW 14th Street****Miami, FL 33172****United States****Shipment No: 55050****Shipment Date: 09/06/12****Ship Via: United Parcel Service****Order Number: 45499****Order Date: 06/11/12****Customer Code: BE AEROSPACE****Phone: (305) 925-2600****PO Number: 0JFH66****Terms: Net 30 Days****LOT #63128**

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	1,000	1,300	0		M	AN6-40A Bolt, machine-- Aircraft	2	63128



**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OJFH66

PART NUMBER: AN6-40A

REV: 2

LOT NUMBER: 63128

MANUFACTURED QUANTITY: 1,300

MILL HEAT NUMBER: 8097919

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 08/31/12

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

<b>CUSTOMER</b> B/E AEROSPACE	<b>PO NUMBER</b> OJFH66	<b>MFG QUANTITY</b> 1,300	<b>DATE</b> 08/31/12
<b>PART NUMBER</b> AN6-40A	<b>REV</b> 2	<b>LOT NO</b> 63128	<b>PROCUREMENT SPEC</b> NASM6812

<b>MATERIAL</b> TYPE 8740				<b>MATERIAL SPECIFICATION</b> MIL-S-6049/AMS6322				<b>MILL HEAT NUMBER</b> 8097919				<b>SUPPLIER</b> JOHNSTOWN		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti	
.39	.25	.85	.008	.01	.15	.42	.52	.2	.002			.03		
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other		
		.0074							.007					

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
12,600	
12,640	
12,620	
12,620	
12,620	
MIN. REQ. 10100	

DOUBLE SHEAR STRENGTH POUNDS / PSI	
17,540	
17,500	
17,520	
17,520	
17,500	
MIN. REQ. 16560	

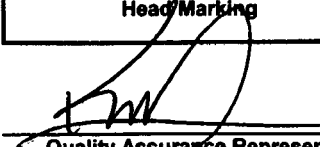
HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS 26-28 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection    System <input type="checkbox"/> System <input checked="" type="checkbox"/> System <input type="checkbox"/> FED-STD-H28/20 - ASME B1.3    21    22    23			

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 08/31/12

PO NUMBER: OJFH66

MANUFACTURED QUANTITY: 1,300

LOT NUMBER: 63128

MATERIAL: TYPE 8740

PART NUMBER: AN6-40A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 26-28 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
\_\_\_\_\_  
QUALITY ASSURANCE REPRESENTATIVE

# **DE TRAY**

## **Plating Works**

**Specialized Electro-Plating and Polishing**  
**Nickel**  
**Copper**  
**Decorative Chrome**  
**Satin Chrome**  
**Zinc**  
**Cadmium**  
**Passivate**  
**Bright Dip**  
**Strip Copper**  
**Descale**

**10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
**Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com**

August 30, 2012

Mac Fasteners  
1110 Enterprise Street  
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice# 164116 dated 08/30/2012 for:

Lot#-63128

P.N.- AN6-40A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



**Johnstown  
Wire  
Technologies**

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
924240

## TEST REPORT

LOT NUMBER

K-8097919

SALES ORDER / RLS

995524 / 1

SOLD TO

Mac Fasteners, Inc.  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



CUSTOMER P.O. <b>50516</b>	CUSTOMER PART	QUANTITY <b>19,931 LBS</b>	COILS <b>10</b>	LADING NO <b>00105772</b>	SHIPMENT DATE <b>08/12/2011</b>	
SPECIFICATION <b>Macfast-87371</b> <b>AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation</b> <b>Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod</b> <b>Spherodize Annealed In Process Heavy Phos &amp; Light Lube Ctd</b> <b>Size: .371 +.001 -.000</b>						
CERTIFICATION REQUIREMENTS						
Chemical						
C .39	Mn .85	P .008	S .010	Si .25	Al .030	Ni .42
Cr .52	Mo .20	Cu .15	V .002			
Cb .001	Ti ???????	N .0074	Sn .007			
Physical						
AMS 2301 0000	J1 58	J10 40	J11 38	J12 36	J2 57	J3 56
					J5 54	J4 55
					J6 52	J7 49
					J8 46	J9 43
MacroClean E-381 111						
Mechanical						
TEST	UNITS	HIGH	LOW	AVERAGE		
Tensile Str	Lbs/SqIn	80000	77000	78000		
RA Per Cent	Percent	73.4	70.5	72.1		
Decarb FFD	Inches	.000	.000	.000		
Surface def. depth	Inches	.000	.000	.000		
Rod / Melt Source						
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes			
End of Certification						

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*D. L. Deetscreek*  
**D. L. Deetscreek**  
Director of Quality Assurance



# Republic

1807 EAST 28TH ST.  
PHONE: 330-438-5694

LORAIN, OH 44055  
FAX: 330-438-5695

## CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

July 3, 2011

PAGE 1

OF 2

PURCHASE OKD: 80881

PART NUMBER: FXT140AA-.659

ORDER NUMBER: 1488320 - 01

HEAT: 8097919

CHARGE ADDRESS

PURCHASE ORDER DATE:

5/16/2011

ACCOUNT NUMBER:

5672-1921-01

SCHEDULE:

5654-90

REVISION:

1

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES

124 LAUREL AVE

JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES

EDWARD ZAPOLA

C/O C & BL RAILROAD

TRACK 629

JOHNSTOWN, PA 15901

### MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS JOHNSTOWN WIRE SPEC PART NO. FXT140AA REVISION DTD 12/31/00 MIL S 6049A & AMS 1 COND B-1 EXC MARK & UT WAIVED EF-AISI 8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS SIZE: RDS .6590 DIAM X COIL RDS 16.7386MM DIAM X COIL

### LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR
0.39	0.85	0.008	0.010	0.25	0.15	0.42	0.52
V	MO	SN	AL	B	CB	N	
0.002	0.20	0.007	0.030	0.0000	0.001	0.0074	

### CALCULATED TESTS

REDUCTION RATIO 381.3 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINEER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

### SEMI - FINISHED RESULTS

#### JOMINY HARDNESS TEST

SAE J406/ASTM A255

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
58 57 56 55 54 52 49 46 43 40 38 36 35 34 33 32 31 30 29 29 29 28 28 28

#### MACRO ETCH TEST

ASTM E381/MIL STD 430

ETCHANT: HCL TEMPERATURE: 170

AVG S R C  
1 1 1

#### MAGNETIC PARTICLE TEST

AMS 2301 AMS2304 AMS2300

	IND	AVG	IND	AVG
FREQ	FREQ	SEV	SEV	
PCE 03	0	0	0	0

### FINISHED SIZE RESULTS

#### DECARBURIZATION TEST

SAE J419/ASTM E1077/JIS G0558

ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 9173	0.003	0	0.002

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE

*M T Kruth*



# Republic

ENGINEERED PRODUCTS

1807 EAST 28TH ST.  
PHONE: 330-438-5694

REPUBLIC ENGINEERED PRODUCTS

LORAIN, OH 44051  
FAX: 330-438-5694

July 3, 2011

PAGE 2

## CERTIFICATE OF TESTS

OF 2

PURCHASE ORD: 80881  
PART NUMBER: FXT40AA-.659  
ORDER NUMBER: 1488320 - 01  
HEAT: 8097919

PURCHASE ORDER DATE: 5/16/2011  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 5654-90  
REVISION: 1

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

### NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10182, LBL10188.

REPUBLIC ENGINEERED PRODUCTS HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND

### NOTES (CONTINUED)

TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED

### SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 381.3

### END OF DATA

### CC

### END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPY

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	50	EA	MS20392-1R27		924937-422	INDIANA AIRCRAFT HAR	5N319		

  
Jason Lewis  
Vice President of Quality

06/16/14



DATE: 12/28/05

TIME: 8:57:21

AIRSUPPLY DIVISION  
70 HPG ALLIANCE  
RECEIPT TRAVELLER: A0759294

PAGE: 1

WSID: RNK94PS8

VENDOR: 9240  
INDIANA AIRCRAFT HARDWARE

PURCHASE ORDER: 650817

DATE RECEIVED: 12/28/05

BUYER: 480



RECEIVING: \*\*\* There is an immediate need for this item \*\*\*

LINE QUANTITY PART NO./DESCRIPTION  
ITEM RECEIVED

1 400 MS20392-1R27  
PIN



VENDOR ITEM#: DASH GROUP: MS20392-

QUALITY PROCUREMENT CLAUSES: ABCHPUV

REV: Std Pkg Size:

QUALITY ASSURANCE: \*\*\* There is an immediate need for this item \*\*\*

DEPT. WORK OPERATION/DESCRIPTION  
NO. CENTER NUMBER

SCHEDULE  
DATE

SAMPLE QUANTITY QUANTITY MANUFACTURER BATCH CURE  
SIZE ACCEPTED REJECTED LOT NO. DATE HPG LOT #

62 400 924937-422

Quality Documents: A Manufacturer's C of C  
Manufactured by: 9240 INDIANA AIRCRAFT HARDWARE

0512038040

INSPECTION NOTES:

STAGING: WAREHOUSE NUMBERS

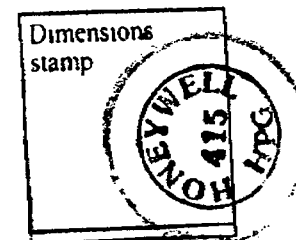
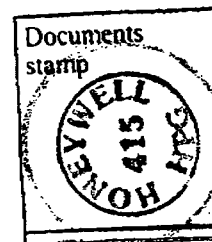
LOCATION ADDRESS

QUANTITIES

LOC: C201 08FD3A 09FG4A 22FA4A 46SD9C

<<< End of Form >>>

OPEN  
ORDER



# Indiana Aircraft Hardware, Inc.

221 S. Main St., Fortville IN 46040-1514

Phone: 317-485-6500

Fax: 317-485-6501

Date: 12/22/2005

Page: 1 of 1

**PACKING SLIP #: 46076**


Cust #:	91794	IAH Ref #:	107507	Terms:	NET 30 FIRM	Weight:	lbs
FOB:	Fortville, IN	Order Date:	12/6/2005	Ship Via:	UPS	# of Boxes:	
Ship Date:	12/22/2005	Buyer/Dept.:		Cust. PO#:	0650817	Salesperson:	Keely

Bill To:

HONEYWELL-Ship to Roanoke  
8260 SOUTH HARDY DRIVE  
MS1234-H27  
TEMPE, AZ 85284

Ship To:

HONEYWELL-Ship to Roanoke  
700 HENRIETTA ROAD  
ROANOKE, TX 76262

Item	Part Number / Description	Quantity Ordered	Quantity Shipped	Qty Back Ordered	Cond.	UOM		
1	MS20392-1R27 PIN Lot #: 924937-422  *** Order Complete ***	400	400	0	NE	EA		
MFR: INDIANA AIRCRAFT HARDWARE CAGE: 5N319  MCO								

## TERMS and CONDITIONS of SALE

No parts may be returned after 30 days. All returned parts must be in original Indiana Aircraft Hardware, Inc. shipping carton, sack, pack, holder, etc. All returned parts must be accompanied by a written explanation for the return. All returned parts must be accompanied by the Indiana Aircraft Hardware, Inc. Returned Materials Authorization number (RMA). All parts listed on this invoice are subject to inspection and approval by the "Sold To" party above, only. This sale is considered complete and final when payment has been received by Indiana Aircraft Hardware, Inc. \*\*\* Special Note: unpaid balances will be charged 1.5% per month plus all collection fees. Charges apply from the first day of delinquency and continue until the entire balance is paid.

## \*\*\*\*\* Certification of Conformance \*\*\*\*\*

If the condition of the parts listed above is new (NE), Indiana Aircraft Hardware, Inc. certifies that all materials and/or parts in this shipment are in conformance with all requirements, specifications and/or relevant drawings. Evidence in support of this certification is on file for examination.

Authorized Signature:

*Keely Hughes*



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

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www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
8	20	EA	AN4C10A		65399	MAC FASTENERS	0RPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

***Packing List*****Bill** B/E AEROSPACE CONSUMABLES MGMT**To:** 10000 NW 15TH TERRACE

MIAMI, FL 33172

**Ship** B/E AEROSPACE CONSUMABLES MGMT**To:** 9835 NW 14th Street

Miami, FL 33172

United States

**Shipment No:** 61786**Shipment Date:** 01/02/14**Ship Via:** United Parcel Service**Order Number:** 46656**Order Date:** 11/04/12**Customer Code:** BE AEROSPACE**Phone:** (305) 925-2600**PO Number:** OLLA24**Terms:** Net 30 Days

LOT #65399

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
1	25,000	30,000	0		M	AN4C10A Bolt, machine-- Aircraft	65399

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OLLA24

PART NUMBER: AN4C10A

REV: 2

LOT NUMBER: 65399

MANUFACTURED QUANTITY: 30,000

MILL HEAT NUMBER: 568515

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 11/14/13

  
QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

<b>CUSTOMER</b> B/E AEROSPACE	<b>PO NUMBER</b> OLLA24	<b>MFG QUANTITY</b> 30,000	<b>DATE</b> 11/14/13
<b>PART NUMBER</b> AN4C10A	<b>REV</b> 2	<b>LOT NO</b> 65399	<b>PROCUREMENT SPEC</b> NASM6812

<b>MATERIAL</b> TYPE 431				<b>MATERIAL SPECIFICATION</b> ASTM A493				<b>MILL HEAT NUMBER</b> 568515			<b>SUPPLIER</b> CARPENTER		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.16	.53	.61	.015	.007		1.55	15.8						
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
6,280	
6,250	
6,260	
6,240	
6,240	
<b>MIN. REQ.</b>	<b>4080</b>

DOUBLE SHEAR STRENGTH POUNDS / PSI	
8,510	
8,500	
8,510	
8,530	
8,520	
<b>MIN. REQ.</b>	<b>7360</b>

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
<b>ACTUAL RESULTS</b> 27-30 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3		System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22
			System <input type="checkbox"/> 23

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 11/14/13

PO NUMBER: OLLA24

MANUFACTURED QUANTITY: 30,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 65399

MATERIAL: TYPE 431

PART NUMBER: AN4C10A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27-30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners Lot#: 65399  
PART NUMBER: AN4C10A  
PROCUREMENT SPECIFICATION: n/a  
OTHER CONTRACTURAL REQUIREMENTS:  
MATERIAL: 431  
QUANTITY: 546 lbs  
INVOICE NUMBER: 174405

#### Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME: James V. Russo

JOB TITLE: VICE-PRESIDENT

DATE: 11/11/2013



**CERTIFICATE OF TESTS**  
CERT SERIAL# 000872411

**ABNAHMEPRUEFZEUGNIS**

**CERTIFICAT DE CONTROLE**



**CARPENTER**

Carpenter Technology Corporation  
101 West Barn Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

05/13/13

CUSTOMER/BESTELLER/CLIENT

SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 1

MAC FASTENERS INC

1110 E. ENTERPRISE  
OTTAWA KS 66067

BOL

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
79757	W71790	05/13/13	7818.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 568515

PRODUCT DESCRIPTION: TYPE 431 COLD FINISH SEAM FREE ANNEALED C HDG CL K1 HVY  
----- CU TENSILE MAX 100.0 KSI  
PART NUMBER: 431-.248

SPECIFICATION: ASTM-A493-09  
-----

SIZE 0.247000 IN. ( 6.27 MM) RD WIRE

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.16	0.61	0.53	0.015	0.007	15.8
NI (XRF)					
1.55					

TENSILE AS SHIPPED, KSI(MPA) 94.5 ( 652)

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

GARY BROWN  
MANAGER - SPECIFICATIONS/CERTIFICATIONS  
CARPENTER TECHNOLOGY CORPORATION

*Gary Brown*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgewiesenen Daten oder Zertifizierungen.  
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
13	25	EA	AN924-6D		F00023640-23379	NELSON AEROSPCE/PERM	52930		

  
Jason Lewis  
Vice President of Quality

06/16/14

# PERMASWAGE

**PERMASWAGE - Nelson Aerospace**  
A Designed Metal Connections, Inc. Company  
10310 Norris Avenue  
Pacoima, CA 91331  
Ph: 818-686-0900  
Fax: 818-686-0181

**Pack Slip: 37810**

**Sales Order: 19396**

Page: 1 of 1

## Customer Packing Slip

### Ship To:

B/E AEROSPACE CONSUMABLES MANAGEM  
9835 NW 14TH ST  
MIAMI FL 33172  
USA

Verify AES requirements prior to shipment.

### Sold To:

B/E AEROSPACE CONSUMABLES MANAG  
PO BOX 025263  
MIAMI FL 33102-5263  
USA

Verify AES requirements prior to shipment.

Fax: 305-507-7194

Ship Date: 9/24/2012

Ship Via: FEDEX GROUND

F.O.B.: EX WORKS

Cust P.O.: OFKR49

Salesperson: JIM THOMPSON

PO Line	Planned Qty	Shipped Qty	Back Order Qty	Part Number Description	Rev	Lot Number
FEDEX GRD # 0331-0149-0 REF. AN924D6	20,000	7,919	1,275.00	AN924-6D NUT	11	F00023640-23379

Sale Order / Line / Release: 19396 / 3 / 1

Customer PO Number: OFKR49

### Certificates Required:

Standard Certification: No  
Full Certifications: Yes

First Article Inspection: No  
Chemical/Physical: No

Material Certificate: No  
FAIR per AS9102: No

4 CTNS 10x10x10 20 LBS

**AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00**

Products listed have not been exposed to mercury or mercury compounds during the manufacturing process.

**!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE -NELSON AEROSPACE SALES @ 818-686-0900 !!**

WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STANDARDS ACT ON 8/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM).

### Certification of Conformance

NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABILITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABILITY IS BASED UPON CONTRACT RIGHTS, NEGLIGENCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECEIPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH.

\_\_\_\_\_  
Manager of Quality Assurance or Designee



# B/E Aerospace, Inc.

Page: 1 of 1

## CONSUMABLES MANAGEMENT

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www.beconsumables.com

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**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO24589**

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	40	EA	AN3H4A		59369	MAC FASTENERS	0RPT4		

  
Jason Lewis  
Vice President of Quality

06/16/14

**MACFASTENERS, INC.**

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

**Packing List****Bill** UFC Aerospace Corp.

To: PO BOX 2061  
HOLTSVILLE, NY 11742-2061  
United States

**Ship** UFC Aerospace Corp.

To: 100 CORPORATE DRIVE  
HOLTSVILLE, NY 11742  
United States

Shipment No: 56964  
Shipment Date: 01/14/13  
Ship Via: Yellow Freightways, Inc.  
Order Number: 43559  
Order Date: 10/24/11

Customer Code: UFC  
Phone: (561) 637-1737  
PO Number: PUR03F5N  
Terms: Net 30 Days

LOT #59369

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	22,000	30,000	0		EA	AN3H4A Bolt, machine-- Aircraft	2	59369



JAN 23 2013

2,172 pcs  
SHORT

# MACFASTENERS, INC.

1110 Enterprise Street  
Ottawa, KS 66067  
Phone: 785-242-8812  
Fax: 785-242-4616

## Packing List

**Bill** UFC Aerospace Corp.  
**To:** PO BOX 2061  
HOLTSVILLE, NY 11742-2061  
United States

**Ship** UFC Aerospace Corp.  
**To:** 100 CORPORATE DRIVE  
HOLTSVILLE, NY 11742  
United States

**Shipment No:** 56964  
**Shipment Date:** 01/14/13  
**Ship Via:** Yellow Freightways, Inc.  
**Order Number:** 43559  
**Order Date:** 10/24/11

**Customer Code:** UFC  
**Phone:** (561) 637-1737  
**PO Number:** PUR03F5N  
**Terms:** Net 30 Days

LOT #59369

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	22,000	30,000	0		EA	AN3H4A Bolt, machine-- Aircraft	2	59369



JAN 23 2013

**MAC FASTENERS, INC.**  
**1110 EAST ENTERPRISE**  
**OTTAWA, KS 66067**

## CHEMICAL & PHYSICAL TEST REPORT

<b>CUSTOMER</b> UFC AEROSPACE CORP	<b>PO NUMBER</b> PUR03F5N	<b>MFG QUANTITY</b> 30,000	<b>DATE</b> 01/11/13
<b>PART NUMBER</b> AN3H4A	<b>REV</b> 2	<b>LOT NO</b> 59369	<b>PROCUREMENT SPEC</b> NASM6812

<b>MATERIAL</b> TYPE 8740				<b>MATERIAL SPECIFICATION</b> MIL-S-6049/AMS6322				<b>MILL HEAT NUMBER</b> 8097603			<b>SUPPLIER</b> JOHNSTOWN		
<b>C</b> .42	<b>Si</b> .25	<b>Mn</b> .88	<b>P</b> .006	<b>S</b> .011	<b>Cu</b> .08	<b>Ni</b> .42	<b>Cr</b> .49	<b>Mo</b> .21	<b>V</b> .002	<b>B</b>	<b>Fe</b>	<b>Al</b> .035	<b>Ti</b>
	<b>Co</b>	<b>N</b> .0069	<b>Bi</b>	<b>Pb</b>	<b>Mg</b>	<b>Zn</b>		<b>Nb</b>	<b>Sn</b> 007			<b>Other</b>	

### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
2,960	
2,980	
2,980	
2,960	
2,980	
MIN. REQ.	2210

DOUBLE SHEAR STRENGTH POUNDS / PSI	
TOO SHORT TO TEST PER NASM1312-13	
MIN. REQ.	

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS 29-30 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3		System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22
			System <input type="checkbox"/> 23

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.



*[Signature]*  
 Quality Assurance Representative

**AS9100C REGISTERED**  
**SAI GLOBAL - 0058029**

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: UFC AEROSPACE CORP

PO: PUR03F5N

PART NUMBER: AN3H4A

REV: 2

LOT NUMBER: 59369

MANUFACTURED QUANTITY: 30,000

MILL HEAT NUMBER: 8097603

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 01/11/13

  
QUALITY ASSURANCE REPRESENTATIVE



MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029



MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: UFC AEROSPACE CORP

DATE: 01/11/13

PO NUMBER: PUR03F5N

MANUFACTURED QUANTITY: 30,000

LOT NUMBER: 59369

MATERIAL: TYPE 8740

PART NUMBER: AN3H4A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 29-30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

  
QUALITY ASSURANCE REPRESENTATIVE



# DE TRAY Plating Works

Specialized Electro-Plating and Polishing  
Nickel  
Copper  
Decorative Chrome  
Satin Chrome  
Zinc  
Cadmium  
Passivate  
Bright Dip  
Strip Copper  
Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

January 9, 2013

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

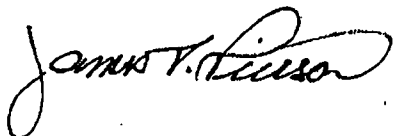
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-  
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our  
Invoice# 166539 dated 01/09/2013 for:

Lot#-59369

P.N.- AN3H4A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS





# Johnstown Wire Technologies

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
884127

## TEST REPORT

LOT NUMBER  
K-8097603  
SALES ORDER / RLS  
996227 / 3

SOLD TO

Mac Fasteners, Inc.  
1110 Enterprise Street  
Ottawa, KS 66067  
USA



CUSTOMER P.O. 50516	CUSTOMER PART	QUANTITY 10,004 LBS	COILS 6	LADING NO 00107240	SHIPMENT DATE 11/09/2011							
SPECIFICATION MacFast-87186 AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In Process Heavy Phos & Light Lube Ctd Size: .1865 +.001 -.000												
CERTIFICATION REQUIREMENTS												
Chemical												
C .42	Mn .88	P .006	S .011	Si .25	Al .035	Ni .42	Cr .49	Mo .21	Cu .08	V .002		
Co .001	Ti ???????	N .0069	Sn .007									
Physical												
AMS 2301 0000	J1 58	J10 43	J11 35	J12 40	J2 58	J3 57	J5 55	J4 56	J6 54	J7 53	J8 50	J9 47
MacroClean E-381 111												
Mechanical												
TEST	UNITS	HIGH	LOW	AVERAGE								
Tensile Str	Lbs/SqIn	82000	82000	82000								
RA Per Cent	Percent	74.6	71.3	73.0								
Decarb FFD	Inches	.000	.000	.000								
Surface def. depth	Inches	.000	.000	.000								
Rod / Melt Source												
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes									
End of Certification												



I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

*D. L. Deetscreek*  
D. L. Deetscreek  
Director of Quality Assurance



1807 EAST 28TH ST.  
PHONE: 330-438-5694

LORAIN, OH 44055  
FAX: 330-438-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

April 28, 2011

PAGE 1

OF 2

PURCHASE ORD: 80357  
PART NUMBER: FXT40AA-.562  
ORDER NUMBER: 1481449 - 01  
HEAT: 8097603

PURCHASE ORDER DATE: 3/14/2011  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 3281-90  
REVISION: 1

CHARGE ADDRESS

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
C/O C & BL RAILROAD  
TRACK 629  
JOHNSTOWN, PA 15901

MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &  
UT WAIVED EF-ALSI-8740-H FINE GRAIN VACUUM DEGAUSS AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS  
SIZE: RDS .5620 DIAM X COIL  
RDS 14.2748MM DIAM X COIL

LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR
0.42	0.88	0.006	0.011	0.25	0.08	0.42	0.49
V	MO	SN	AL	B	CB	N	
0.002	0.21	0.007	0.035	0.0001	0.001	0.0069	

CALCULATED TESTS

REDUCTION RATIO 524.3 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER  
ASTM A29.

SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST

SAE J406/ASTM A255

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
58 58 57 56 55 54 53 50 47 43 35 40 38 36 35 34 32 32 31 30 29 29 28 28

MACRO ETCH TEST

ASTM E381/MIL STD 430

ETCHANT: HCL TEMPERATURE: 170

	S	R	C
AVG	1	1	1

MAGNETIC PARTICLE TEST

AMS 2301 AMS2304 AMS2300

	IND	AVG	IND	AVG
FREQ	FREQ	SEV	SEV	
PCE 03	0	0	0	0

FINISHED SIZE RESULTS

DECARBURIZATION TEST

SAE J419/ASTM E1077/JIS G0558

ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 6151	0.004	0	0.003

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE

*M T Kruth*





# Republic

ENGINEERED PRODUCTS

1807 EAST 28TH ST.  
PHONE: 330-438-5694

LORAIN, OH 44055  
FAX: 330-438-5695

## CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

April 28, 2011  
PAGE 2

OF 2

PURCHASE ORD: 80357  
PART NUMBER: FXT40AA-.562  
ORDER NUMBER: 1481449 - 01  
HEAT: 8097603

PURCHASE ORDER DATE: 3/14/2011  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 3281-90  
REVISION: 1

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

NOTES  
CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC ENGINEERED PRODUCTS HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND

NOTES (CONTINUED)  
TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED

SOURCE INFORMATION  
MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A  
MELT METHOD: EF BLOOM RED. RATIO: 524.3

END OF DATA CC END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA  
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684  
FILE 1 COPY

G. KRUTH  
DIRECTOR QUALITY ASSURANCE

BY HILDA BEGUE

*MT Kruth*

